

**A STUDY ON DIAGNOSTIC METHODOLOGY
AND SYMPTOMATOLOGY OF
KAAKKAI VALI
(GRANDMAL EPILEPSY)**

(DISSERTATION SUBJECT)



For the partial fulfilment of the requirements to the Degree of

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INTRODUCTION

Siddha system of medicine is an ancient and holistic medical system among all systems of medicine in the world. This system was developed by the Sagely Siddhars whose life goal was to attain salvation . It is a system which deals not only to cure the disease, but also with prevention from the disease and provide the ways for fulfillment in life. It deals with the Physical health of an individual and also with the mind. This System of medicine aims in equalizing the deranged panchaboothas, tridoshas of the body and restores a stable healthy equilibrium.

According to Siddha fundamental philosophy, the entire universe is made up of Pancha Boothangal, so any changes in the cosmos will be reflected in the human body. The five basic elements combined to form three Humours namely Vatham, Pitham and Kabam. Any derangement in these humours results in development of Disease. In Siddha system, diseases are diagnosed mainly by the main diagnostic tools namely Naa,Niram,Mozhi,Vizhi,Naadi, Neerkuri, Neikkuri and Manikkadai nool.

According to Siddha system of medicine, the diseases are numbered as 4448. Sage Agathiyar classified many diseases based on the clinical signs and symptoms along with the humoral pathology.Valippu Noi is one among them. Kaakkai Vali is one among the types of Valippu Noi. It's signs and symptoms may be correlated with Grandmal Epilepsy in modern science.

The clinical presentation of the disease is mainly due to vatha Kaba humour. Kaba humour will be deranged by Emotional Stress,increased sexual indulgence, increased intake of cold foods. Clinically the disease is manifested with symptoms like Periodic Episodes of Seizures, Hypertonicity of the limbs, Epileptic aura,History of Urinary incontinence,History of faecal incontinence and dryness of the tongue.

. Epilepsy is a brief recurrent disorder of Cerebral function usually associated with disturbance of Consciousness and accompanied by a sudden excessive electrical discharge of Cerebral neurons. It is not a Contagious disease and is not caused by mental illness or mental retardation. One in ten individuals will have

single Seizure at some time in their lives. The Prevalence of Epilepsy is 1% and the incidence is 0.1%.

Recent Studies in developed countries suggest an annual incidence of epilepsy of approximately 50 per 100,000 of the general population. However, studies in developing countries suggest that this incidence is nearly double that at 100 per 100,000.

Grandmal Epilepsy is a common form of Epilepsy. It comes under the type of Generalised Seizures which are always associated with loss of awareness of the surroundings. These type of Seizures are recognized as Epileptic Fits by laymen.

In this dissertation, the author tries to expound this **Kaakkai Vali** with a detailed analytical approach through Siddha Diagnostic methods.

AIM & OBJECTIVES

2.1. AIM

To conduct a study on Kaakkai vali as mentioned in Agathiyar Vaithiya Kaandam, thereby to evolve a diagnostic methodology for Kaakkai vali in Siddha system of medicine.

2.2. OBJECTIVES

2.2.1. PRIMARY OBJECTIVES:

1. To conduct the cause and clinical course of disease by keen observation on the symptoms of Kaakkai vali.
2. To elucidate a diagnostic methodology for Kaakkai vali.

2.2.2. SECONDARY OBJECTIVES:

1. The Objective of this dissertation work includes literary and observational study on the etiology, pathogenesis and Clinical presentation of Kaakkai vali.

2. By evolving a diagnostic method for the disease, it helps the clinicians to derive a proper line of treatment and adopt preventive measures based on Siddha system of medicines.

3. This study is also to correlate clinically, the symptoms of Kaakkai vali with that of closely resembling condition Grandmal Epilepsy in modern medical literature which in turn helps in globalization of Siddha system.

SIDDHA PHYSIOLOGY

3. A.1. SUGARANA NILAI (PHYSIOLOGICAL STATE) IN SIDDHA MEDICINE

The five basic elements, namely Aagayam (Space), Kaal (Air), Thee (Fire), Neer (Water), and Mann (Earth) are the building blocks of all the physical and subtle bodies existing in this whole universe. These are called as the ‘Adippadai Boothams’ (Basic Elements) (or) ‘Panchaboothams’.

These five elements together constitute the human body and origin of other material objects are explained as Panchaekaranam (Mutual Intra Inclusion). None of these elements could act independently by themselves. They could act only in co-ordination with other four elements. All the living creatures and the non-living things are made up of these five basic elements. The five basic elements form the connecting link between the Microcosm (Man) and Macrocosm (World). This concept is evident from Siddhar’s lines,

“அண்டத்தில் உள்ளதே பிண்டம்;

பிண்டத்தில் உள்ளதே அண்டம்”

Any change in the universe due to natural or unnatural causes will create changes in human systems. For example the natural disorders like cyclone, heavy rain, mist and scorching sun or man created impurities of air and water will create changes both in the atmosphere and in the human body. Hence the change in the elementary conditions of external world has its corresponding change in the human organs.

உலகம் பஞ்ச பூதம்

"நிலம் நீர்தீவளி விசும்போடைந்தும்

கலந்தமயக் கமுலகம் மாதலின்"

-தொல்காப்பியம்

தேகம் பஞ்ச பூதம்

"தலங்காட்டி இந்தச் சடமான ஐம்பூதம்
நிலங்காட்டி நீர் காட்டி நின்றிடுந் தீ காட்டி
வலங்காட்டி வாயுவால் வளர்ந்தே இருந்தது
குலங்காட்டி வானில் குடியாய் இருந்ததே".

-பதினென் சித்தர் நாடி சாஸ்திரம்

As per the above lines, the universe and the human body are made of five basic elements.

3. A.2. THE 96 BASIC PRINCIPLES (96 THATHUVAM)

According to Siddha system of medicine, 'Thathuvam' is considered as a science that deals with basic functions of the human body. Siddhars described 96 principles as the basic constituents of human body that include physical, physiological, psychological and intellectual components of an individual. These 96 Thathuvams are considered to be the cause and effect of our physical and mental well-being. The Thathuvam is the author of the conception of human embryo on which the theory of medicine is based.

1. BOOTHAM – 5 (*ELEMENTS*)

1. **Aagayam** - Firmament
2. **Vaayu** - Flatus(Air)
3. **Thee** - Fire
4. **Neer** - Fluid(Water)
5. **Mann** - Firm Ground(Earth)

2. PORI – 5 (*SENSE ORGANS*)

1. **Sevi (Ear)** -a structural component of 'Aagayam' bootham
2. **Thol (Skin)** -a structural component of 'Vaayu' bootham
3. **Kann (Eye)** -a structural component of 'Thee' bootham
4. **Naakku (Tongue)** -a structural component of 'Neer' bootham
5. **Mookku (Nose)** -a structural component of 'Mann' bootham

3. PULAN – 5 (*FUNCTIONS OF SENSE ORGANS*)

1. **Kaetal** -Hearing, a functional component of Aagayam bootham
2. **Thoduthal** -Touch, a functional component of Vaayu bootham
3. **Paarthal** -Vision, a functional component of Thee bootham
4. **Suvaithal** -Taste, a functional component of Neer bootham
5. **Nugarthal** -Smell, a functional component of Mann bootham

4. KANMENTHIRIYAM – 5 (*MOTOR ORGANS*)

1. **Vaai (Mouth)** - Speech is delivered in relation with Space element.
2. **Kaal (Leg)** -Walking takes place in concordance with Air element.
3. **Kai (Hands)** -Giving/Taking are carried out with the influence of Fire element.
4. **Eruvaai (Rectum)** -The excreta is eliminated in association with Water element.
5. **Karuvaai (Sex Organs)** -The Sexual acts are carried out in association with the earth element.

5. KARANAM – 4 (*INTELLECTUAL FACULTIES*)

1. **Manam** - Thinking about something
2. **Bhuddhi** - Deeply analyzes the same
3. **Agankaaram** - Determination to do the same
4. **Siddham** - Accomplishment of the determined Thing

6. ARIVU – 1 (*WISDOM OF SELF REALIZATION*)

To analyze good and bad

7. NAADI – 10 (*CHANNELS OF LIFE FORCE RESPONSIBLE FOR THE DYNAMICS OF PRANAN*)

1. **Idakalai** - Starts from the right big toe, runs criss-cross to end in the left nostril
2. **Pinkalai** - Starts from the left big toe, runs criss-cross to end at the right nostril.
3. **Suzhumunai** -Starts from Moolaathaaram and extends upto centre of head
4. **Siguvai** - Located at the root of tongue; it helps in the swallowing of food and water
5. **Purudan** -Located in right eye.

- 6. **Kanthari** -Located in left eye.
- 7. **Atthi** -Located in right ear.
- 8. **Allampudai** -Located in left ear.
- 9. **Sangini** -Located in genital organ
- 10. **Gugu** -Located in ano-rectal region

8. VAAYU – 10 (VITAL NERVE FORCE WHICH IS RESPONSIBLE FOR ALL KINDS OF MOVEMENTS)

1. Uyir kaal (Piraanan)

This is responsible for the respiration of the tissues, controlling knowledge, mind and five sense organs and digestion of the food taken in.

2. Keel nokku kaal (Abanan)

It lies below the umbilicus. It is responsible for the downward expulsion of stools and urine, ejaculation of semen and menstruation.

3. Paravu kaal (Viyanan)

This is responsible for the motor and sensory function of the entire body and the distribution of nutrients to various tissues.

4. Mael nokku kaal (Uthanan)

It originates at Utharakini. It is responsible for digestion, absorption and distribution of food. It is responsible for all the upward movements.

5. Samaanan (Nadu kaal)

This is responsible for the neutralization of the other 4 Valis i.e. Piranan, Abanan, Viyanan and Uthanan. Moreover it is responsible for the nutrients and water balance of the body.

6. Naagan

It is a driving force of eye balls responsible for movements.

7. Koorman

It is responsible for the opening and closing of the eyelids and also vision. It is responsible for yawning.

8. Kirukaran

It is responsible for the salivation of the tongue and also nasal secretion.
Responsible for cough and sneezing and induces hunger.

9. Devathathan

This aggravates the emotional disturbances like anger, lust, frustration etc. As emotional disturbances influence to a great extent the physiological activities, it is responsible for the emotional upsets.

10. Dhanancheyan

Expelled three days after the death by bursting out of the cranium. It is responsible for edema, plethora and abnormal swelling in the body in the pathological state.

9. AASAYAM – 5 (VISCERAL CAVITIES)

1. **Amarvasayam** (Reservoir Organ) - Stomach. It lodges the ingested food.
2. **Pakirvasayam** (Absorption Site)-Small intestine. The digestion and assimilation of food, absorption of saaram from the digested food are done by this Asayam.
3. **Malavasayam** (Excretory organ for solid waste) -Large Intestine, especially rectum, the place where the expulsion of undigested food parts and flatus takes place.
4. **Chalavasayam** (Excretory organ for liquid waste)- Urinary Bladder, kidney. Site of the formation and excretion of urine.
5. **Sukkilavasyam** (Genital organs.) –Site of production and development of spermatazoa and ovum.

10. KOSAM – 5 (*FIVE STATUS OF THE HUMAN BODY OR SHEATH*)

1. **Annamaya Kosam** -Gastro intestinal system
2. **Pranamaya Kosam** - Respiratory system
3. **Manomaya Kosam** - Mental System

4. **Vignanamaya Kosam** - Nervous system and higher intellect

5. **Aananthamaya Kosam** -Reproductive system

11. AATHARAM – 6 (*STATIONS OF SOUL*) “ஓம் ந ம சி வா ய”

1. Moolatharam

Situated at the base of spinal column between genital and anal orifice and beneath the perineum. Letter “ஓம்” is stationed here.

2. Swathitanam

Located 2 fingerwidths above the Moolaathaaram, (i.e.) midway between genital and navel region. Letter “ந” is inherently present here. Earth element is attributed to this region.

3. Manipooragam

Located 8 fingerwidths above the Swathitanam, (i.e.) at the naval center. Letter “ம” is inherently present here. Element is water.

4. Anakatham

Located 10 fingerwidths above Manipooragam, (i.e.) location of heart. Letter found is “சி”. Element is fire.

5. Visuthi

Located 10 fingerwidths above the Anakatham (i.e.) located in throat. Letter “வா” is inherently present. Element is Air.

6. Aakinai

Situated between the two eyebrows. Letter “ய” is inherently present here. Element is Space

12. MANDALAM – 3 (*REGIONS*)

1. Thee Mandalam (fire zone)

Fire Zone is found 2 finger widths above the Moolaathaaram

2. Gnayiru Mandalam (Solar zone)

Solar zone, located 4 finger widths above the umbilicus.

3. Thingal Mandalam (lunar zone)

Lunar zone is situated at the center of two eye brows

13. MALAM – 3 (*THREE IMPURITIES OF THE SOUL*)

1. Aanavam

This act clouds the clarity of thought, cognitive power of the soul, yielding to the egocentric consciousness like ‘I’ and ‘Mine’ claiming everything to be his own (Greediness).

2. Kanmam

Goes in collaboration with the other two responsible for incurring Paavam (the Sin) and Punniyam (Sanctity / virtuous deed).

3. Mayai

Serves as an obstacle due to the mentality of claiming ownership of the others property and thereby inviting troubles.

14. THODAM- 3 (*THREE HUMOURS*)

1. Vali (Vatham) - It is the creative force formed by combination of Vaayu and

Aakaya bootham

2. Azhal (Pitham) - It is the protective force. Formed by Thee bootham

3. Iyam (Kabam) -It is the destructive force. Formed by Mann and Neer

Bootham

15. EADANAI -3 (*PHYSICAL BINDINGS*)

1. Porul Patru - Materialistic affinity

2. Puthalvar Patru - Sibbling / Familial bonding

3. Ulaga Patru - Worldly affections

16. GUNAM – 3 (*THREE COSMIC QUALITIES*)

1. **Sathuvam** (Characters of Renunciations or Ascetic Virtues)

The grace, control of senses, wisdom, penance, generosity, Excellence, calmness, truthfulness is the 8 qualities attributed to their benevolent trait.

2. **Raasatham** (Royal character)

Enthusiasm, wisdom, valour, virtue, penance, offering gift, art of Learning, listening are the 8 traits

3. **Thamasam** (Carnal / Immoral Character)

Immorality, lust, anger, murderousness, violation of justice, gluttony, falsehood, forgetfulness, fraudulence, etc.

17. VINAI – 2 (ACT)

1. **Nalvinai** - Good Acts (Meritorious acts)
2. **Theevinai** - Bad Acts (Sinful acts)

18. RAGAM – 8 (THE EIGHT PASSIONS)

1. **Kaamam** - Lust
2. **Kurotham** - Grudge / Hatred
3. **Ulobam** - Stingy
4. **Moham** - Infatuation
5. **Matham** - Rut (The feeling of high ego towards oneself)
6. **Marcharyam** - Internal Conflict, Envy
7. **Idumbai** - Mockery
8. **Ahankaram** - High Ego

19. AVATHAI – 5 (FIVE STATES OF CONSCIOUSNESS)

1. **Ninaivu** - State of wakefulness with the 14 karuvikaranathigal in all vibrancy (5 Pulan, 5 Kanmaenthiriyam and 4 Karanam) and is able to experience the pleasures and pains

2.Kanavu– State of dreams. In this 10 karuvikaranathigal (5 Pulan, 5 Kanmaenthiriyam) except karanam all lies dormant in the neck.

3. Urakkam - State of Sleep after which one cannot recapitulate what is seen or heard. The respiration lies in the heart.

4. Perurakkam - State of Repose (Tranquil or Peaceful State). The Jeevaathma lies in the naabi, producing the respiration.

5. Uyirpadakkam – Oblivious of the surroundings. The Jeevaathma is deeply immersed in Moolaathaaram resulting in a state of unawareness.

3. A.3.THE UYIR THATHUKKAL

The physiological units of the Human body are,

- Vali (Vatham),
- Azhal (Pitham) and
- Iyyam (Kapham).

They are also formed by the combination of the five basic elements. Accordingly Vali is formed by the combination of Vali (Air) and Aagayam (Space). This is the Creative force. Azhal is formed by Thee (Fire). This is the Force of Preservation. Iyyam is formed by Mann (Earth) and Neer (Water). This is the Destructive Force. These three humors are in the ratio 4:2:1 in equilibrium which is a healthy normal Condition. They are called as the life forces or humours.

"பொங்கிய தைந்துக்குள் பொல்லாதது இம் முன்றுதான்
தங்கிய வாயு சமத்தன் மகாவாதம்
பங்கிய வன்னியால் பகுந்தது பித்தமே
பகுந்த சலத்தில் பரிசிக்கும் நல்லையும்
வகுந்த இம்முன்றால் வளர்ந்தது நோயெல்லாம்
அகுந்தது தானறிந்து அளவிட்ட யோகிகள்
மகிழ்ந்தே யிதில் நின்ற மயக்கம் அறிவாறே"

-பதினெண் சித்தர் நாடி சாஸ்திரம்

THE FORMATION OF UYIR THATHUKKAL,

மூவகை நாடியும் உயிர் தாதுவும்

"தாது முறையே தனிஇடை வாதமாம்
போதுறு பின்கலை புகன்றது பித்தமாம்
மாது சுமுமுனை வழங்கிடும் ஐயமாம்
ஒது முறை பார்த்து உணர்ந்தவர் சித்தரே"

-பதினெண் சித்தர் நாடி சாஸ்திரம்

மூவகை வாயுவும் உயிர் தாதுவும்

"உணர்ந்த அபானன் உறும் அந்த வாதத்தில்
புணர்ந்த பிராணன் புகும் அந்தப் பித்தத்தில்
அணைந்த சமானன் அடங்கும் கபத்தோடு
இணைந்திவை மூன்றுக்கு எடுத்த குறி ஒன்றே"

-பதினெண் சித்தர் நாடி சாஸ்திரம்

The Vali naadi is formed by the combination of Abanan and Idagalai.

The Azhal naadi is formed by the combination of Piranan and Pinkalai.

The Iyya naadi is formed by the combination of Samanan and Suzhumunai.

I.Vali (Vatham)

Vali is soft, fine and the temperate (coolness and hotness) which could be felt by touch.

The sites of vali

According to **Vaithya Sathakam**, Vali dwells in the following places:

"நெளிந்திட்ட வாதமபானத்தைப் பற்றி

நிறைந்திடையைச் சேர்ந்துந்திக் கீழே நின்று

குளிந்திட்ட மூடமதூ டெழுந்து காமக்

கோடியிடையைப் பற்றியெழுங் றொக்கை நாடி

நிணமான பொருத்திடமும் ரோமக் காலும்

நிறைவாகி மாங்கிசமெல் லாம்பரந்து"

-வைத்திய சதகம்

Umbilicus, Rectum, Faecal matter, Abdomen, Anal region, Bones,
Hip joints, Navel Plexus, Joints, Hair follicle and Muscles.

"அறிந்திடும் வாத மடங்கு மலத்தினில்"

-திருமூலர்

"நாமென்ற வாதத்துக் கிருப்பிடமே கேளாய்

நாபிக்குக் கீழென்று நவில லாகும்"

-யுகி

According to Sage Thirumoolar and Sage Yugi muni, the location of
Vatham is the anus and the sub navel region.

Properties of Vali

"ஒழுங்குடனே தாதேழ் மூச்சோங்கி இயங்க

எழுச்சிபெற எப்பணியுமாற்ற எழுந்திரிய

வேகம் புலன்களுக்கு மேவச் சுறுசுறுப்பு

வாகளிக்கும் மாந்தர்க்கு வாயு"

-சித்த மருத்துவாங்கச் சுருக்கம்

The following are the natural properties of Vali

- 1) To stimulate the respiration
- 2) To activate the body, mind and the intellect.
- 3) To activate the fourteen different types of natural reflexes or urges.

- 4) To activate the seven physical constituents in functional co-ordination.
- 5) To strengthen the five sense organs.

In the above process Vatham plays a vital role in assisting the body functions.

II. Azhal (Pitham)

The nature of Azhal is Atomic. It is sharp and hot. The ghee becomes watery, salt crystallises and jaggery melts because of heat. The heat of Azhal is responsible for many actions and their reactions.

The sites of Azhal

According to **Vaithiya Sathagam**, the Pingalai, Urinary bladder, Stomach and Heart are the places where Azhal is sustained. In addition to the above places, the umbilicus, epigastric region, stomach, sweat, saliva, blood, essence of food, eyes and skin are also the places where Azhal sustains. Yugi muni says that, the Azhal resides in urine and in the places below the neck region.

The character of Azhal

Azhal is responsible for the digestion, vision, maintenance of the body temperature, hunger, thirst, taste etc. Its other functions include thought, knowledge, strength and softness.

The functions of Azhal

- 1) Maintenance of body temperature
- 2) Produces reddish or yellowish colour of the body.
- 3) Produce heat energy on digestion of food.
- 4) Produces sweating
- 5) Induces giddiness.
- 6) Produces blood and the excess blood is let out.
- 7) Gives yellowish colouration to the skin, eyes, faeces and urine
- 8) Produce anger, heat, burning sensation, inaction and determination.
- 9) Gives bitter or sour taste.

Types of Azhal

1. Aakkanal – Anila Pitham or Prasaka pitham – The fire of digestion.

It lies between the stomach and the intestine and causes digestion and dries up the moist ingested substance.

2. Vanna eri – Ranjaga pitham – Blood promoting fire

This fire lies in the stomach and gives red colour to the chyle and produces blood. It improves blood.

3. Aatralanki – Saathaga pitham – The fire of achievement

It gives energy to do the work.

4. Ulloli thee – Prasaka pitham – The fire of brightness.

It gives colour, complexion and lusture to the skin.

5. Nokku Azhal – Alosaga pitham – The fire of vision.

It lies within the eyes and causes the faculty of vision. It helps to visualize things.

III. Iyyam (Kapam)

The nature of Iyyam

Greasy, cool, dull, viscous, soft and compact are the natures of Iyyam.

Sites of Iyyam

Head, tongue, eyes, nose, throat, thorax, bone, bone marrow, Joints, blood, fat, sperm and colon are the sites of Iyyam. It also lies in stomach, spleen, the pancreas, chyle and lymph.

The natural quality of Iyyam

Stability, greasiness, formation of joints, the ability to withstand hunger, thirst, sorrow and distress are the qualities. It also helps to withstand sufferings.

Functions of Iyyam

Greasiness, strength, roughness, knowledge, cool, growth, heaviness of bone, restriction of joint movements, pallor, indigestion, deep sleep and to have a sweet taste in tongue are the functions of Iyyam. The skin, eyes, faeces and urine are white in colour due to the influence of Iyyam.

Five types of Iyyam

1. Azhal Iyyam -Avalambagam

Heart is the seat of Avalambagam. It controls all other 4 Iyyams

2. Neerpi iyyam -Kilethagam

Its location is stomach. It gives moisture and softness to ingested food.

3. Suvai kaan iyyam – pothagam

Its location is tongue. It is responsible for the sense of taste.

4. Niraivur iyyam – Tharpagam

It gives coolness to the eyes.

5. Ondri iyyam – Santhigam

It gives lubrication to the bones particularly in the joints

3. A.4. THE UDAL THATHUKKAL

Udal Thathukkal are the basic physical constituents of the body. They are also constituted by the Five Elements.

SEVEN PHYSICAL CONSTITUENTS OF THE BODY

1. Saaram -This gives mental and physical perseverance.

2. Senneer -Imparts colour to the body and nourishes the body

- 3. Oon** -It gives shape to the body according to the physical activity and plasters the skeleton to give the body a plumpy appearance.
- 4. Kozhuppu** -It lubricates the joints and other parts of the body for smooth functioning.
- 5. Enbu** -Supports the frame and responsible for the postures and movements of the body.
- 6. Moolai** -It occupies the medulla of the bones and gives strength and softness to them.
- 7. Sukkilam** -It is responsible for reproduction.

3. A.5. UDAL THEE (Four kinds of body fire)

There are four kinds of body fire. They are Samaakkini, Vishamaakkini, Deeshaakkini and Manthaakkini.

1. Samaakkini

The digestive fire is called as Samaakkini. This is constituted by Samana Vayu, Anala Pitham and kilethaga Kapham. If they are in normal proportion, then it is called as Samaakkini. It is responsible for the normal digestion of the food

2. Vishamaakkini

Due to deranged and displaced Samana Vayu, it takes longer time for digestion of normal food. It is responsible for indigestion due to delay in digestive process.

3. Deeshaakkini

The Samana vayu blends up with the Azhal, which leads to increased Anala Pitham, so food is digested rapidly.

4. Manthaakkini

The Samana vayu conjugates with the Iyyam, which leads to increased Kilethaga Kapham. Therefore food is sluggishly digested for a very longer period leading to abdominal pain, distention, heaviness of the body etc.

3. A.6.THINAI

There are five thinai (the land)

1. Kurinchi - Mountain and associated areas
2. Mullai - Forest and associated areas
3. Marudham - Agricultural land and associated areas
4. Neidhal - The coastal and associated areas
5. Paalai - Desert and associated areas

3. A.7. KAALAM

Ancient Tamilians divided a year into six different seasons known as Perumpozhudhu and likewise the day into six segments which are known as Sirupozhudhu

Perumpozhudhu:

A year is divided into six seasons. They are as follows

- Kaarkalam – Monsoon season (August 16 – October 15)
- Koothirkalam – Postmonsoon season (October 16 – December 15)
- Munpanikalam- Early winter season (December 16 – February 15)
- Pin panikalam – Late winter season (February 16 – April 15)
- Illavenilkalam – Early summer season (April 16 – June 15)
- Mudhuvenilkalam – Late summer season (June 16 – August 15)

Sirupozhuthu

A day is divided into six yamams. They are,

1. Maalai (Evening),
2. Idaiyammam (Midnight),
3. Vaikarai (Dawn),
4. Kaalai (Morning),
5. Nannpakal (Noon),
6. Erpaddu (Afternoon).

Each perumpozhuthu and sirupozhuthu is associated with the three humors naturally.

3. A.8.FOURTEEN NATURAL REFLEXES/ URGES

The natural reflexes excretory, protective and preventive mechanisms are responsible for the urges and instincts. They are 14 in number,

1. Vatham (Flatus)
2. Thummal (Sneezing)
3. Siruneer (Micturition)
4. Malam (Defaecation)
5. Kottavi (Act of yawning)
6. Pasi (Sensation of hunger)
7. Neer vetkai (Sensation of thirst)
8. Erumal (Coughing)
9. Ellaipu (Fatigue)
10. Thookam (Sleep)

11. Vaanthi (Vomiting)
12. Kaneer (Tears)
13. Sukilam (Semen)
14. Suvasam (Breathing)

These natural reflexes are said to be an indication of normal functioning of our body. A proper maintenance should be carried out and they should not be restrained with force.

SIDDHA PATHOLOGY

3.B.1. KUGARANA NILAI IN SIDDHA MEDICINE

According to Siddha System, human body sustains the state of healthy living via keeping the Three Humours- Vatham, Pitham and Kabam in equilibrium, influenced by dietary habits, daily activities and the environment around. The three humours represent the five basic elements or Bhuthas. In case this equilibrium is disturbed, it leads to a condition known as disease. It is basically the derangement of five elements, which in turn alters the Three Humors. There can either be a decrease or increase in the balance.

3. B.2. DISEASE

Disease is also known by other names viz sickness, distemper, suffering and ailment, distress of mind, chronic disease and dreadful illness.

3.B.3. THE CHARACTERISTICS FEATURE OF DISEASE

Diseases are of two kinds:

- i. Pertaining to the body
- ii. Pertaining to the mind according to the variation of the three humors.

1. Causes of Disease

Excepting the disease caused by our previous births, the disease is normally caused by the disparities in our food habits and actions. This has been rightly quoted in the following verses by Sage Thiruvalluvar,

"மிகினும் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலா வெண்ணிய மூன்று"

-திருவள்ளுவர்

The food and actions of a person should be in harmony with the nature of his body. Any increase or decrease in a humor viz. Vatham, Pitham, Kabam leads to the derangement of the three humors. The acceptance of food means the taste and quality of the food eaten and a person's ability to digest. 'Action'

mean his good words, deeds or bad actions. According to Thiruvalluvar, the disease is caused due to the increase or decrease of three humors causing the upset of equilibrium.

So disease is a condition in which there is derangement in the five elements, which alters the three humors, reflected in turn in the seven physical constituents. The change could be an increase or decrease in the humours. This shows the following signs as per vitiation of the individual humour.

நோய் பிறக்கும் வகை

"பிணியினுற் பத்தியைப் பேசுவேன் பிணிமுதல்
வாதபித் தங்கப் மன்மந்திரி தந்திரி
வீதமா யுடலரண் மெய்ப்புர வரசுச்செய்
முறைசெயு மாதலான் முதற்புர மென்றுட
கறைகுவ ராரிய ரதன்பரி வாரமா
நோய்க்கண மிகுதியி னணுகுநுட் பமதாய்ப்
பேய்க்கண மாமவை பெரும்பசி தாகுமூர்
வழிநடை வெயின்மழை மலிதணீர் நனைவுடன்
மந்தமாங் காரமாய் வார்த்தையா டுத(ற்)றுயில்
வந்தவை விலக்குதன் மாதரைக் கூடுதல்'
வெந்தறு கட்கதம் வீரமாய்ச் சுமத்தலும்
மலசல பந்தனை வருமித னனமிகப்
பெலமுறு நோய்களும் பிறப்பதும் நிச்சயம்."

- தேரையர் காப்பியம்

As per Theraiyar, the cause of disease is vitiated Vatha, Pitha and Kaba, increased appetite, increased thirst, excessive hot, anger, constipation, dysuria polluted water.

2. QUANTITATIVE CHANGES OF UYIR THATHUKKAL

HUMOUR	INCREASED	DECREASED
VALI (Vatham)	Wasting, blackish discoloration, affinity to hot foods, tremors, distended abdomen, constipation, weakness, insomnia, weakness in sense organs, giddiness and laziness.	Body pain, feeble voice, and diminished capability of the brain, decreased intellectual quotient, syncope and increased kaba condition.
AZHAL (Pitham)	Yellowish discoloration of conjunctiva, skin, urine and faeces, polyphagia, polydypsia, dyspepsia, burning sensation all over the body and decreased sleep.	Loss of appetite, cold, pallor and features of increased kabam.
IYYAM (Kabham)	Loss of appetite, excessive salivation, diminished activity, heaviness, pallor, cold, decreased physical constituents, dyspnoea, flatulence, cough and excessive sleep.	Giddiness, dryness of the joints and prominence of bones. Profuse sweating in the hair follicles and palpitation.

3. UDAL THATHUKAL

These are the changes produced when Udal thathukkal are affected.

UDAL KATTUKKAL	INCREASED FEATURES	DECREASED FEATURES
1.SARAM	Loss of appetite, excessive salivation, diminished activity, heaviness, pallor, cold, decreased physical constituents, dyspnoea, flatulence, cough & excessive sleep.	Dryness of skin, tiredness, loss of weight, lassitude and irritability while hearing louder sounds.
2.SENNEER	Boils in different parts of the body, spleenomegaly, tumours, pricking pain, loss of appetite, haematuria, hypertension, reddish eye and skin, leprosy and jaundice.	Affinity to sour and cold food, nervous, debility, dryness and pallor.
3.OON	Tubercular adenitis, venereal diseases, extra growth around neck, cheeks, abdomen, thigh and genitalia.	Lethargic sense organs, pain in the joints, muscle wasting in mandibular region, gluteal region, penis and thighs.
4.KOZHUPPU	Identical feature of increased flesh, tiredness, dyspnoea on exertion, extra musculature in gluteal region, external genitalia, chest, abdomen and thighs.	Loins pain, spleenomegaly and emaciation.

5.ENBU	Excessive ossification and dentition.	Joint pain, falling of teeth, falling and splitting of hairs and nails.
6.MOOLAI	Heaviness of the body and eyes, swollen interphalangeal joints, oliguria and non-healing ulcers.	Osteoporosis & Blurred vision.
7.SUKKILAM (OR) SURONITHAM	Increased sexual activity, urinary calculi.	Dribbling of sukkilam/ suronitham or senner during coitus, pricking pain in the testis & inflamed and contused external genitalia.

4.KAALAM

Change in Elementary conditions of the external world has its corresponding change in the human organs. They are as follows:

KALAM	KUTTRAM	STATE OF KUTTRAM
1. Karkaalam (Rainy season) (Aavani – Puratasi) (Aug 16 – Oct 15)	Vatham ↑↑ Pitham ↑ Kabam (--)	Ectopic escalation Insitu escalation Restitution
2. Koothir Kaalam (Postrainy season) (Iypasi – Karthigai) (Oct 16 – Dec 15)	Vatham (--) Pitham ↑↑ Kabam (--)	Restitution Ectopic escalation Restitution
3. MunpaniKaalam (Winter season) (Markazhi – Thai) (Dec 16 – Feb 15)	Vatham (--) Pitham (--) Kabam (--)	Restitution Restitution Restitution
4. Pinpani Kaalam (Post winter) (Masi – Panguni) (Feb 16 –Apr 15)	Vatham (--) Pitham (--) Kabam ↑	Restitution Restitution Insitu escalation
5. Elavenir Kaalam (Summer) (Chithirai–Vaikasi) (Apr 16 – Jun 15)	Vatham (--) Pitham (--) Kabam ↑↑	Restitution Restitution Ectopic escalation
6. MudhuvenirKaalam (Post summer) (Aani – Aadi) (Jun 16 – Aug 15)	Vatham ↑ Kabam (--)	Insitu escalation Restitution

5.THINAI

S. NO	THINAI	LAND	HUMORS
1.	Kurinchi	Mountain and its surroundings Hilly terrain	Kabam
2.	Mullai	Forest and its surroundings Forest ranges	Pitham
3.	Marutham	Farm land and its surroundings Cultivable lands	All three humors are in equilibrium
4.	Neithal	Sea shore and its adjoining areas, Coastal belt	Vatham
5.	Palai	Desert and its surroundings Arid zone	All three humors are affected.

6. Alteration in Reflexes (14 VEGANGAL)

There are 14 natural reflexes involved in the physiology of normal human beings. If willfully restrained or suppressed, the following are resulted.

1. Vatham (Flatus)

This urge should not be suppressed. If it is suppressed it leads to chest pain, epigastric pain. Abdominal pain, ache, constipation, dysuria and indigestion predominate.

2. Thummal (Sneezing)

If restrained, it leads to headache, facial pain, low back pain and neuritic pain in the sense organs.

3. Siruneer (Urine)

If restrained, it leads to urinary retention, urethral ulcer, joint pain, pain in the penis, gas formation in abdomen.

4. Malam (Faeces)

If restrained, it leads to pain in the knee joints, headache, general weakness, flatulence and other diseases may also originate.

5. Kottavi (Yawning)

If restrained, it leads to indigestion, leucorrhoea, and abdominal disorders.

6. Pasi (Hunger)

If restrained, it leads to the tiredness of all organs, emaciation, syncope, apathetic face and joint pain.

7. Neer vetkai (Thirst)

If restrained, it leads to the affection of all organs and pain may supervene.

8. Kaasam (Cough)

If it is restrained, severe cough, bad breath and heart diseases will be resulted.

9. Ilaippu (Exhaustiveness)

If restrained, it will lead to fainting, urinary disorders and rigor.

10. Nithirai (Sleep)

All organs will get rest only during sleep. So it should not be avoided. If disturbed it will lead to headache, pain in the eyes, deafness and slurred speech.

11. Vaanthi (Vomiting)

If restrained, it leads to itching and symptoms of increased Pitham.

12. Kanneer (Tears)

If it is restrained, it will lead to Sinusitis, headache, eye diseases and Chest pain.

13. Sukkilam (Semen)

If it is restrained, there will be joint pain, difficulty in urination, fever and chest pain.

14. Swaasam (Breathing)

If it is restrained, there will be cough, abdominal discomfort and Anorexia.

DIAGNOSTIC METHODOLOGY

The Diagnostic methodology in Siddha system is unique as it is made purely on the basis of clinical acumen of the physician. The diagnosis is arrived from,

- Poriyal arithal and Pulanal arithal (examination of sense organs)
- Vinaathal (Interrogation)
- Envagai thervu (Eight fold examination)
- Manikkadai nool (Wrist circumference sign)
- Sothidam (Astrology)
- Assessment of deranged three Dosham (humours), Udal thathukal and 96 principles.

PORIYAL ARIDHAL

The physician should examine the patient's porigal by his porigal.

- | | | |
|----------|---|--------------------------------|
| 1. Mei | - | To feel all types of sensation |
| 2. Vaai | - | For knowing taste |
| 3. Kan | - | For vision |
| 4. Mooku | - | For knowing the smell |
| 5. Sevi | - | For hearing |

PULANAL ARITHAL

The physician should examine the patient's pulangal by his porigal & Pulangal

- | | | |
|--------------|---|--------|
| 1. Hearing | - | Ear |
| 2. Vision | - | Eye |
| 3. Taste | - | Tongue |
| 4. Sensation | - | Skin |
| 5. Smell | - | Nose |

VINAADHAL (INTERROGATION)

The physician should interrogate the patient's name, age, occupation, native place, Socio – economic status, dietary habits, present complaints, history of present illness, aggravating factors, history of previous illness.

ENVAGAI THERVUGAL

“அகத்துறு நோயை கரத்தாம லகம்போல்
பகுத்தறிவீர் நாடிப் பரிசம் - தொகுத்த நிறம்
கட்டுவகைச் சொல்மொழிகண் கண்ட மல மூத்திரம் நா
எட்டுவகை யாலு மறிவீர்”

- அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

According to Agathiyar Vaithiya Sinthaamani Venba – 4000, the Envagaithervu Includes Naadi (Pulse) Naa (Tongue), Niram (Color), Mozhi (Voice), Vizhi (Eyes), Malam (Faeces), Neer (Urine) and Sparisam (Touch & palpation).

"நாடி பரிசம் நாநிறம் மொழிவிழி
மலம் மூத்திரம் மருத்துவராயுதம்"

-தேரையர்.

"மெய்குறி நிறந்தொனி விழிநாவிருமலம் கைக்குறி"

-தேரையர்.

As per Saint Therayar, the eight methods of diagnosis are Naadi (Pulse) Naa (Tongue), Niram (Color), Mozhi (Voice), Vizhi (Eyes), Malam (Faeces), Neer (Urine) and Sparisam (Touch & palpation).

பதினெண் சித்தர் நாடி சாத்திரம்

"பாரீர்நாடி யறிந்து உணர்ந்து பரமன் செயலும் பிணிமுறையும்
நீரேயோடு மலசலமும் நிறமுங் குணமு முகக்குறியும்
சாரே யிணங்குங்குழல் மடவீர்காலன் றேகம் வயதிளமை
தேரேயறியுமுகநாடி நெறிங்குறியுஞ் செறியுஞ் சொல்வோமே"

-பதினெண் சித்தர் நாடி சாத்திரம்

As per Sage Agathiyar, Naadi (pulse), Malam (stools), Salam (urine), Niram (complexion), Gunam (character), MugaKuri (facies), Thegam (constitution), Vayadhu (age), Elamai are the diagnostic tools.

"தொகுக்கலுற்ற அட்டவிதப் பரீட்சை தன்னை
 துலக்கமுரும் பண்டிதரே தெளிவதாகப்
 பகுக்கரிய நாடியை நீ பிடித்துப் பாரு
 பகர்கின்ர வார்தையைப்பார் நாவைப்பாரு
 வகுக்கரிய தேகமதைத் தொட்டுப்பாரு
 வளமான சரீரத்தின் நிறத்தைப் பாரு
 சகிக்கரிய மலத்தைப்பார் சலத்தைப் பாரு
 சார்ந்தவிழி தனைப்பார்த்துத் தெளிவாய்க் கானே"
 -கண்ணுசாமிப்பரம்பரை வைத்தியம்

According to literature KannuSaami Paramparai Vaithiyam, Naadi, Naa, Thegam, Thodu unarvu, Niram, Malam, Salam and Vizhi are the diagnostic tools.

அகத்தியர் வைத்திய ரத்தின சுருக்கம்

"நாடியால் முன்னோர் சொன்ன நற்குறிகுணங்களாகும்
 நீடிய விழியினாலும் நின்ற நாட்குறிப்பினாலும்
 வாடிய மேனியாலும் மலமோடு நீரினாலுஞ்
 சூடிய வியாதி தன்னைச் சும் பெற வறிந்து சொல்லே"

According to Agathiyar Vaithiya Rathina Surukkam, the diagnostic tools are Naadi (Pulse), Vizhi (Eyes), Kurigunam (Signs), Nalkurippu (Chronology), Maeni (Constitution), Malam (Stools) And Neer (Urine).

பரிபூரண நாடி

"அட்டமாங்கிரிகடன்னை யறிந்து நீயுணரவேண்டில்
 வட்டமாமுகங்கள்பல்லும் வாயதில்நாக்குங்காயங்
 கட்டருமலங்கள் கைதனில்நாடிதானுந்
 திட்டமாயறிந்துசெய்யுந் திறமுள்ளவயித்தியராமே"

According to the Paripoorana Naadi, the diagnostic parameters are Mugam (Facies), Pal (Teeth), Vai (Mouth), Naakku (Tongue), Kaayam, Irumalam, Naadi (Pulse).

தன்வந்திரி பகவான்

"திருமறை முனிவன் கூறும் வாகடச் செய்கைதன்னில்
வருபல வியாதியான வகையறி குவதே தென்னில்
உருவறு நாடி யாலு மொண்முக மலநீ ராலும்
தெரிவிழி நாவினாலுந் தந்தலக் கணத்தி னாலும்"

-தன்வந்திரி (ப.சி.நாடி சாத்திரம்)

According to Dhanvantri Vaithiyam, the diagnostic parameters are Naadi (Pulse), Mugam (Facies), Malam (Stools), Neer (Urine), Udal (Constitution), Vizhi (Eyes), Naa (Tongue), Pal (Teeth).

பதினெண் சித்தர் நாடி சாத்திரம்

"திரணியதோர் நாடிகண்கள் சத்தத்தோடு
தேகத்தின் துபரிசம் வானம் நாக்கு
இரணமலம் இவைகளெட்டும் இதம்படவே
தான்பார்த்துக் குறிப்புங் கண்டு
பரனருளாற் பெரியோர்கட்பாதம் போற்றிப்
பண்புதவறாமற் பண்டிதணஞ் செய்வீரே"

-பதினெண் சித்தர் நாடி சாத்திரம்

According to the above literature, the diagnostic tools are Naadi (Pulse), Kan (Eyes), Sattham (Voice), Thegam (Constitution), Sparisam and Naa (Tongue).

1.TONGUE EXAMINATION (நாத்தேர்வு)

"முள்ளாய் வெடித்து கருத்தான் முன்பின் வெளுத்து
தள்ளாநீ ருண்டோ சேர்ந்தால் பசந்தால் - எல்லாம்
நடுவாம் பலபலவாம் நற்சன்னி முன்னோய்
ஓடுநீரில் நாவின்றோது."

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

As per Agathiyar Vaithiya Sinthaamani Venba – 4000, fissured and black tongue represent vitiated Vatha humor, pallor represents Kabam , green colour represents Pitha humor and mixed appearance of these features resembles Sanni noi.

“பலமான ருசியறியும் நாவின் கூற்றைப்
பகர்கின்றேன் வாதரோகி யின்றன் நாவு
கலமாக வெடித்து கறுத்திருக்கு முட்போல்
கண்டு கொள்வாய் பித்தரோகியின்றன் நாவு
நலமுற சிவந்து பச்சென்றிருக்கும் நட்பிலா
சிலேத்துமரோகி யின்றன் நாவு
தலமதனிலுற்றமுதி யோர்கள் சொன்ன
தன்மையடி தடித்து வெளுத்திருக்கும்பாரே”

-கண்ணுசாமி பரம்பரை வைத்தியம்

In Vali derangement, tongue will be cold, rough, furrowed and tastes pungent. In Azhal, it will be red or yellow and kaippu taste will be sensed. In Iyyam, it is pale, sticky and sweet taste will be lingering. In depletion of Thontham, tongue will be dark with raised papillae and dryness.

Examination of tongue also includes the salivary examination. The following stanza describes salivary examination

“எச்சிற் பரிவாயிளநீர்பால் வெண்ணெயனை
யெச்சிற் பரிவா யிலகுநுரை - யெச்சிற்
களியடைமா நன்றுமுதற் நண்ணான்கு முன்னிக்
களியடைமா மேவுபிட கா.”

-சிகிச்சாரத்ன தீபம்

2. EXAMINATION OF COMPLEXION (உடல் நிறத் தேர்வு)

“உரைத்தகற்ப் பான்வாத ரோகிபித்த ரோகி
அரைத்தமஞ்ச ளைக்குளித்தோன் ஆவான் - இரத்தம்
குளித்தவனு மாவான் கொடும்சிலேத்தும ரோகி
வெளுத்திடுவான் தொந்தரோகியெ..”

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

"மூன்றாகும் வாதபித்த சிலேத்து மத்தால்
 மிகுந்தமுறத் தொந்தித்த ரோகி தேகம்
 தோன்றாத சீதய வுஷ்ணங் காலமுன்றுந்
 தொகுத்தேன்யான் திரேகத்தி னிறத்தைக் கேளு
 ஊன்றாத வாதவுடல் கறுத்துக் காணும்
 ஊரியபித்த முடல் சிவப்புப் பசுமைகாணும்
 போன்றாத வையவுடல் வெண்மை தோன்றும்
 பொருந்துந்தொந்த ரோகவுடற் கிவற்றை யொக்கும்"
 -கண்ணுசாமி பரம்பரை வைத்தியம்

"பனைவாத தேகநிறங் கறுத்து நிற்கும்
 பைத்தியதேக நிறமஞ்சள் சிவப்பதாமே
 தாமே சிலேட்டு மதேகநிறம் வெளுப்பு தான்
 தொந்தேகம் இந்நால் விதமாயநிற்கும்"
 -தன்வந்திரி (பதினெண் சித்தர் நாடி சாத்திரம்)

In Vali, Azhal and Iyyam vitiations, the colour of the body will be dark, yellow or red and fair respectively.

3. VOICE EXAMINATION (ஒலித் தேர்வு)

"பலரோகி வார்த்தைப் பலவிதமாம் வாதத்
 தலைரோகி வார்த்தைச் சமமாகும் - நிலைகடந்த
 பித்தரோ கிக்குஉயர்ந்த பேச்சுண்டாம் ச்லேட்டுமந்தான்
 சத்தம்ஈ னச்சுரமாம் தான்."

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

"பார்ப்பதான் வாதரோகி யின்றன் வார்த்தை
 பக்குவமாய்ச் சமசத்த மாயிருக்கும்
 சேர்ப்பதுதான் பித்தரோகியின்றன் வார்த்தை
 செப்பக்கோள பெலத்துமே யுறத்திருக்கும்
 ஏற்பதுதான் ஐயரோகி யின்றன் வார்த்தை
 யெளிதாகச் சிறுத்திருக்குமியல்பிதாகும்

கேசற்கவே யிம்முன்றுந் தொந்தமாகில்

கூசாமற் பலவிதமாய் பேசுவாரே"

- கண்ணுசாமி பரம்பரை வைத்தியம்

"மாமயிலே சத்தமது அறிய வேண்டில்

வாதரோகிசம தொனியாய் வார்த்தை பேசும்

ஈமமுள்ள பித்தந்தான் இறைந்த கூறும்

இயம்பிடும் சிலேத்தும ரோகிக்கீனசத்தம்

நாமுரைத்தோம் தொந்த ரோகிக்குத் தானிந்த

நால்விதமாய் மொழிந்த சத்தம் நயந்து காணே"

-பதினெண் சித்தர் நாடி சாத்திரம்

In vitiation of Vali, Azhal and Iyyam, the voice would be normal, high pitched and shrill or low pitched respectively. By the voice, the strength of the body can be assessed.

4. THE EYE EXAMINATION (கண் தேர்வு)

"கண்கறுத்து நீரோடில் காலாம் நடுவாகில்

கண்பசக்கும் சொக்கும் கடையாகில் - கண்பீளை

சாடி வெளுக்குமே சன்னிவாதம் பித்தமுமென்

றோடியகா மாலை பசக்கும்"

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

As per Agathiyar Vaithiya Sinthaamani Venba – 4000, in vitiated Vali eyes turn black and tears shed. In vitiated Azhal humour , mukkutram and in jaundice yellowish discoloration occurs. In vitiated Iyyam, the eyes turn white.

" உண்மையாய் கண்கள்குறிப் பதைக்கேள் வாதம்

உற்றவிழி கறுத்துநொந்து நீருங் காணும்

தண்மையிலாப் பித்தரோகி யின்றன் கண்கள்

சார்பாகப் பசுமைசிவப் பேறுங் காணும்

வண்மையிலா வையரோகி விழிகள் தானும்

வளமான வெண்மைநிற மேதா நாதம்

திண்மையிலாத் தொந்தரோகி யின்றன் கண்கள்

தீட்டுவாய் பலநிறமென் றறைய லாமே"

-கண்ணுசாமி பரம்பரை வைத்தியம்

"காணுகின்ற வாத ரோகிக்கு கண்கள்

கருநிறமாய் நொந்துமிகத் தண்ணீர்பாயும்

பூணுகின்ற பித்தரோகிகடி மஞ்சள் போலிருக்கம்

சிவப்பு நிறப்பொலிவு தோன்றும்"

-பதினெண் சித்தர் நாடி சாத்திரம்

In Vali disease, the tears is darkened, in Azhal disease they are yellow, in Iyya disease they are whitish in colour and in Thontha disease the tears are multi coloured. In Vali disease there will be excessive tears (epiphora). In disturbance of all the three humuors, eyes would be inflamed and reddish.

5. FAECES EXAMINATION (மல தேர்வு)

"கறுத்தமல பந்தமலங் காலாகும் பித்தம்

சிறுத்தமுட் டிணம்செம்மை சேரும் - பொறுத்தொருக்கால்

சீதமலந் தில்லையுமாம் சேர்ந்தபல ரோகியாம்

மீதமலம் எண்ணிறமுமே."

- அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

As per Agathiyar Vaithiya Sinthaamani Venba – 4000, in vitiated Vali, the stool is hard and black. In vitiated Azhal, it is hot and red. In vitiated Iyyam it is cool and watery.

"ஒக்குமே வாத நோய் மலத்தைப் பார்க்கில்

உகந்தமலம் கறுகியே கறுத்திருக்கும்

மிக்கபித்த நோய்மலத்தை யுற்றுப் பார்க்கில்

மிகுந்தசிவப்புடன் பசுமை தானுந் தோற்றும்

மைக்குவளை மனேகே ளைய ரோகம்

மலமதுதான் வெண்மைனிற மாயிருக்கும்

பக்குவமா யிம்முன்றுந் தொந்திப் பாகில்

பகருமின் நிறங்கள்வகை பரிந்து காணும்"

-கண்ணுசாமி பரம்பரை வைத்தியம்.

In excacerbated Vali, faeces is hard, dry and black in colour. In Azhal vitiation, it is yellow. In Iyyam, disturbance it is pale.

6. URINE EXAMINATION (நீர் தேர்வு)

“வாதரோ கம்தெளிந்தான் மஞ்சளித்தான் மற்றையது

சீதனுரைத் தார்பலவாம் சேளர்ந்தநோய் - கோதகலா

முத்திரத்தின் உண்மை மொழிந்தோம் இனிச் சொல்வாம்

நாத்திரத்தின் உள்ளவகை நாம்.”

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

"ஓங்கிய வாதத்தோர்க்கு நீர்விழுங் குணந்தா நுரைக்கிற

பூங்கொடி கறுத்துநொந்து சிறுத்துடன் பொருமி வீழும்

பாங்குடன் பித்தத்தோர்க்கும் பசியநீர் சிவந்து காட்டி

ஏங்கவே கறுக்கதாக எரித்துடன் கடுத்து வீழும்

வீழுமே சிலேற்பனத்தோர் நீர்க்குணம் விளம்பக் கேளாய்

நாளுமே வெளத்துறைந்து நலம்பெற வீழுங் கண்டாய்

வாள்விழி மானேதொந்த ரோகமா னிடர்க்குத் தானே

தாளுநீர் பலநிறந்தா னெனவே சாற்றி னோமே"

- கண்ணுசாமி பரம்பரை வைத்தியம்

‘Neer’ refers to Urine ‘Kuri’ refers to Sign. Theraiyar, one of the renowned authors of Siddha medicine described urine examination and stages of health. He had explained about the colour and consistency of the urine in vitiated humor and disease. He also emphasized the spreading nature of a single drop of oil on the surface of the urine indicating the imbalance of specific dosha and prognosis of disease. Normal urine is straw coloured and odourless. The time of the day and food taken will have an impact on the colour of the urine.

COLOUR OF URINE

- Yellow colour – similar to straw soaked water – indigestion
- Lemon colour – good digestion
- Reddish yellow – heat in body
- Colour similar to flame of forest red or flame coloured excessive heat
- Colour of saffron – extreme heat

“மாணிக்கம் பால்பிரச மஞ்ச ளிஃதுயிர
மாணிக்கம் பால்வரிசை மாறாநீர் - மாணிக்க
முத்தம் மாதிரி யொருநாலு மந்தமுனே
யுத்தம் மாதிரி யுன்.”

- சிகிச்சாரத்ந தீபம்

As per Sikicharathna Theepam,

COLOUR OF URINE - PROGNOSIS

- | | | |
|---------------------------|---|-------------------------|
| • Ruby red or milky white | - | Poor |
| • Honey | - | Slow and take long time |
| • Golden yellow | - | Good |

NEIKKURI (நெய்க்குறி)

“ அருந்து மாறிரதமும் அவிரோதமதாய்
அஃகல் அலர்தல் அகாலவூன்தவிர்ந்தழற்
குற்றள வருந்தி உறங்கி வைகறை
ஆடிகலசத் தாவியே காதுபெய்
தொரு முகூர்த்தகலைக்குட்படு நீரின்
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே”

“ அரவென நீண்டினஃகே வாதம்
ஆழிபோல் பரவின் அஃதே பித்தம்
முத்தொத்து நிற்கின் மொழிவதன் கபமே”

-அகத்தியர் வைத்திய ரத்தின சுருக்கம்

The spreading pattern of oil drop is the indicative of Vali, Azhal and Iyyam diseases e.g

1. Aravu (Snake Pattern of spread) indicates Vali disease
2. Mothiram (Ring Pattern of spread) indicates Azhal disease
3. Muthu (Pearl Pattern of spread) indicates Iyya disease

In Neikkuri, the rapid spread of oil drop; Pearl beaded and Sieve type of spreading pattern indicates incurable state of the disease. From this, we can assess the prognosis by the Neikkuri.

"இலகுமா மூத்தி ரத்தி லெண்ணையை விட்டுப் பார்க்கில்
கலக்கஞ் செய் வாதத் தோர்க்குக் காணவே நீள மாய்ப்போம்
பிலனுறு மெய்யை வாட்டும் பித்தமே சிதறிக் காட்டும்.

சாற்றிய கபந் தனக்குச் சல்லடைக் கண்போல் காணும்
தேற்றிய திரிதோ டந்தான் சொல்முன்று குணமுங் காட்டும்
வேற்றொரு துளியாய் நின்றால் வெகுதாம் சாத்தியந்தான்
ஆற்றிமெள் ளப்ப டர்ந்தா வதுசுக சாத்ய மாமே

ரினி லமுந்திப் போனால் நிகழ்ந்திடு மசாத்தியந்தான்
வாரிடு முளையாய் கேளாய் வளைய பாத்திரத்தி லேனும்
பாரினில் குயவன் செய்மண் பாத்திரந் தனிலா னாலும்
சாரவே பிடித்து வெய்யிற் றனில்வைத்துப் பார்ப்பாய்தானே."

- தேரையர் விருத்தம் - சிகிச்சாரத்ந தீபம்

SPREADING PATTERN OF OIL - INTERVENTION

Lengthening	-	Vali
Splits	-	Azhal
Sieve	-	Iyyam
Stands as a drop	-	Poor prognosis
Slowly spreads	-	Good prognosis
Drop immerses into the urine	-	Incurable disease

7. TOUCH (தொடு உணர்வு)

"வெம்மை குறைந்தாலு மிகுந்தாலும் வாதபித்தம்
தம்மை நிரைநிரையாய்ச் சாற்றுவார்- வெம்மையன்றி
சீதமும்அவ் வாறாகில் சிலேட்டும் மொன்றுதொந்த
மீதமும்அவ் வாறாகு மேல்."

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

“நேயமுடனே வாதத்தின் தேசந்தானும்
நேர்மையாய்க் குளிர்ந்து சில விடத்திலே தான்
மாயமுட னுட்டணமுந் துடிதுடிப்பு
மருவுதலாம் பித்தத்தின் தேகந் தானும்

தோயவே வுட்ணமதா யிருக்குந் தெளிவாய்
சேத்துமத்தின் தேகமது குளிர்ந்திருக்கும்
பாய தொந்த தேகமது பலவாறாகும்
பரிந்து தொட்டுத் தேகத்தைப் பார்த்துப் பேசே"

-கண்ணுசாமி பரம்பரை வைத்தியம்

In Vali disease, some regions of the body felt chill and in some areas they are hot. In Azhal disease, we can feel heat. In Iyya disease, chillness can be felt. In Thontham diseases, we can feel altered sensations.

8. NAADI (நாடி)

The ‘Pulse Diagnosis’ is a unique method in Siddha Medicine. The pulse should be examined in the Right hand for male and the left hand for female. The pulse can be recorded at the radial artery. By keenly observing the pulsation, the diagnosis of disease as well as its prognosis can be assessed clearly.

Naadi is nothing but the manifestation of the vital energy that sustains the life within our body. Naadi plays an most important role in Envagai thervu and it has been considered as foremost thing in assessing the prognosis and diagnosis of various diseases. Any variation that occurs in the three humors is reflected in the Naadi. These three humors organize, regularize and integrate

basic functions of the human body. So, Naadi serves as a good indicator of all ailments.

நாடி பார்க்கும் வகை

"இடுமென்ற நாடிகள்பார்க்கும் வகையைக் கேளு
என்னவென்றால் நடுவிரல் நீவிப்பின்னே
அடுமென்ற அடுத்தவிரல் மோதிரமாம் விரலை
அப்பனே இளுத்தபின்பு சுண்டுவிரலிளுத்து
உடுமென்ற தூண்டுவிர லிளுத்து அப்பால்
உத்ததொரு அங்குட்ட விரலைநீ விக்கரத்தில்

படுமென்ற சீயோதி அங்குலமோ தள்ளி
பார்தடவி மூன்றுதரம் சுரம்பார்க்கும் வகையே
வகை என்ன வாதமது ஒண்ணைரையாம் பித்தம்
வளமையொன்று அய்யங்கால் வளமாய்நிற்கில்
பகையில்லை நாடிகளுந் தொந்த மில்லை
பண்பான் சுகரொசருருபக் கூறுசொன்னேன்"
-அகத்தியர் கனகமணி100

Naadi is felt by,

Vali	-	Tip of index finger
Azhal	-	Tip of middle finger
Iyyam	-	Tip of ring finger

மூவகையும் மாத்திரை அளவும்

"வழங்கிய வாதம் மாத்திரை ஒன்றாகில்
வழங்கிய பித்தம் தன்னில் அரைவாசி
அழங்கும் கபந்தான் அடங்கியே காலோடில்
பிழங்கிய சீவற்குப் பிசுகொன்று மில்லையே"

-நோய் நாடல் முதல் பாகம்

The pulse is measured in wheat/grain expansive heights. The normal unit of pulse diagnosis is 1 for Vali (Vatham), ½ for Azhal (Pitham) and ¼ for Iyyam (Kapham).

THE PULSE PLAY

Compared to the gait of various animals, reptiles and birds,

“வாகிலன்னங் கோழி மயிலென நடக்கும் வாதம்
ஏகிய வாமையட்டை யிவையென நடக்கும் பித்தம்
போகிய தவளை பாம்பு போலவாம் சேத்துமந்தான்”

--நோய் நாடல் முதல் பாகம்

Vali - Movement of Swan and Peacock
Azhal - Movement of Tortoise and Leech
Iyyam - Movement of Frog and Serpent.

“பார்க்கையில் கைவிகாரம் பார்த்தா லாடவர்க்கு
எற்கும் வலக்கை இடக்கை - மடவார்க் காசு”

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

Naadi is examined in right side for men and on the left side for women.

9. MANIKADAI NOOL (Wrist circumetric sign)

Agathiya soodamanikayaru ..

“கமலக்கை மணிக்கையில் கயறு சூத்திரம்
விமலனே நோக்கியே வேடமாமுனி
திமிலாம் பிணியது சேரச் செப்பியே
அமலனாமுனிக்கு முன்னருளிச் செய்ததே”

-பதினெண் சித்தர் நாடிநூல்

According to the Pathinen Siddhar Naadinool, Manikadainool is also helpful in diagnosis. This manikkadai nool is a parameter to diagnose the disease by measuring the circumference of the wrist by means of a thread and then dividing the measured circumference with the patient's fingers. By this measurement the disease can be diagnosed.

When the Manikkadai nool is 11 fbs, the person will be stout and he will live a healthy life for many years. When the Manikkadai nool measures between 4 to 6, it indicates poor prognosis of disease and the severity of the illness will be high and it leads to death.

MANIKKADAI -INFERENCE NOOL

10 fbs	-	Pricking pain in chest and limbs, gastritis and ulcer result.
9 ¾ fb	-	Fissure, dryness and cough will be resulted.
9 ½ fbs	-	Odema, increased body heat, burning sensation of eye, fever, Mega noi and anorexia.
9 ¼ fbs	-	Dysuria, insomnia ,sinusitis and burning sensation of eye.\
9 fbs	-	Impaired hearing, pain around waist, thigh pain, unable to walk.
8 ¾ fbs	-	Increased body heat, skin disease due to toxins, abdominal discomfort, cataract, sinusitis.
8 ½ fbs	-	Leucorrhoea, venereal disorder and Infertility will occur..
8 ¼ fbs	-	Stout and painful body. Headache. Sinusitis and toxins induced cough.
8 fbs	-	Abdominal discomfort, gastritis, anorexia and venereal diseases.
7 ¾ fbs	-	Piles, burning sensation of limbs, headache, numbness occur. Within 2 years cervical adenitis and epistaxis results.
7 ½ fbs	-	Osteoporosis, abdominal discomfort, burning sensation of eyes, increased body temperature. Within 6 days all the joints of the limbs presents a swelling.
7 ¼ fbs	-	Lumbar pain, increased pitha in head, anemia, eye pain, odema and somnolence

7 fbs	-	Pitham ascends to head, haemetemesis, phlegm, burning sensation of limbs and constipation.
6 ¾ fbs	-	Eye ache, dizziness, testis disorder. Within 3 years it causes anuria, pain and burning sensation over limbs, facial sweating results.
6 ½ fbs	-	Thirst, anorexia, increased body heat and vatham results.
6 ¼ fbs	-	Diarrhea, belching, vomiting and mucous dysentery
6 fbs	-	Reduced weight, phlegm in chest. It results in death within 20 days.
5 ¾ fbs	-	Delirium, dizziness, loss of consciousness . It results in death even if the patient takes gruel diet
5 ½ fbs	-	Severity of illness is increased. Toxins spread to the head. Tooth darkens. Patient will die in 10 days.
5 ¼ fbs	-	Patient seems to be sleepy and death results on the next day.
5 fbs	-	Pallor and dryness of the body. Kabam engorges the throat and the person will die.
4 ¾ fbs	-	Dryness of tongue and tremor present. Patient will die in 7 days.
4 ½ fbs	-	Shrunken eyes, odema will present and death results in 9 days.
4 ¼ fbs	-	Tremor, weakness of limbs and darkening of face occurs. Finally death results in two days.
4 fbs	-	Pedal odema will be present. Patient will die in 5 days.

10. THE ASTROLOGY

Macrocosm and Microcosm

Man is said to be Microcosm, and the Universe is Macrocosm; since what exist in the Universe exists in the human body too. Man is being an integral part of universal nature. The forces prevailing in the microcosm (Human body) are analogous with that of the forces prevailing in the macrocosm (Universe). The natural forces acting in and through various organs of the body are intimately related to or similar to or correspond to the forces acting in and through the organisms of the world.

This closely follows the Siddhar's doctrine,

"அண்டத்திலுள்ளதே பிண்டம்
பிண்டத்திலுள்ளதே அண்டம்
அண்டமும் பிண்டமு மொன்றே
அறிந்து தான் பார்க்கும் போதே"

- சட்டமுனி

Astral influences:

All the influences which are radiated from the sun, planets and that of the stars can act upon the human bodies. Moon exercises a very bad impact on the disease in general especially during the period of new moon. For instance, paralysis, brain affections, dropsy, and stimulation of sexual perversions are resulted during the newmoon. Mars causes anemia and lack of nervous vigour. A conjugation of the moon with other planets such as Venus, mars, etc may make its influence still more injurious.

The 8th place forms the laghanam which deals about ones age, chronic diseases, death etc. In the organisms of man, these forces may act in an abnormal manner and cause disease. Similarly, in the great organism of the cosmos, they act abnormally likewise and bring about disease on earth and its atmospheric condition like earthquake, storms etc. The Mars invisibly influences human's blood constituents. The Venus instigates intersexual love.

The following are the instances in which every sign of the zodiac acts towards some particular parts of the body.

1. According to T.V.S. Dictionary:

- | | |
|------------|---|
| 1. Aries | - Neck |
| 2. Taurus | - Neck and shoulder |
| 3. Gemini | - Arms and hands |
| 4. Cancer | - Chest and adjacent parts. |
| 5. Leo | - The heart and stomach |
| 6. Virgo | - The intestines, base of stomach and umbilicus |
| 7. Libra | - Kidney |
| 8. Scorpio | - Genitals |

- | | |
|----------------|---------|
| 9. Sagittarius | - Lips |
| 10. Capricorns | - Knees |
| 11. Aquarius | - Legs |
| 12. Pisces | - Feet |

2. According to literature Thiruvalluvar periya sunthara sekaram.

- | | |
|----------------|-----------------|
| 1. Mesham | - Head |
| 2. Rishabam | - Face |
| 3. Mithunam | - Neck |
| 4. Kadagam | - Shoulders |
| 5. Simmam | - Chest |
| 6. Kanni | - Side of body |
| 7. Thulaam | - Back, stomach |
| 8. Virutchigam | - Testicles |
| 9. Thanusu | - Thigh |
| 10. Magaram | - Knees |
| 11. Kumbam | - Heel |
| 12. Meenam | - Foot |

11. The Impact of the Planets on the Human Organs

According to the literature Siddha Maruthuvanga Surukkam

Each of these planets hold jurisdiction over some parts of the body similar to the signs of the Zodiac. The planets exercise special power over some parts of the body resulting in a disease or diseases in accordance with their impacts on the three basic humors in the system.

1. Sani (Saturn)

It exhibits supremacy over the bones, tooth, cartilages, ear, spleen, bladder and brain and gives rise to fever, leprosy, paralysis, dropsy, cancer, cough, asthma, deafness of the right ear, hernia etc.

2. Guru (Jupiter)

It holds jurisdiction over the blood, liver, pulmonary veins, diaphragm, Muscles of the trunk and sense of touch & smell.

3. Sevvaai (Mars)

It has got power over the bile, gall bladder, left ear, pudendum, kidneys, fever, jaundice, convulsions, hemorrhage, carbuncle, erysipelas, ulcer etc.

4. Sukkiran (Venus)

It exercises its impact on the blood and semen, throat, breast, abdomen, uterus, genitalia, taste, smell, pleasurable sensation, gonorrhea, barrenness, Abscesses or even death from sexual passions or from poison.

5. Pudhan (Mercury)

It holds jurisdiction over the animal, spirit, also over legs, feet, hands, fingers, tongue, nerves and ligaments and produces fevers mania, phrenitis, epilepsy, convulsion, profuse expectoration or even death by poison, witchcraft and so on.

Planets	Organs of impact
1. Solar force	Heart
2. Lunar force	Brain
3. Mars	Gall Bladder
4. Mercury	Kidney
5. Venus	Lungs
6. Jupiter	Liver
7. Saturn	Spleen

5. According to literature Thiruvalluvar Periya Sunthara Sekaram.

- | | | | |
|----|-----------|---|---------------------------|
| 1. | Sooriyan | - | Head |
| 2. | Santhiran | - | Face |
| 3. | Sevvai | - | Chest |
| 4. | Puthan | - | Center of Posterior Trunk |
| 5. | Guru | - | Stomach |
| 6. | Sukkiran | - | Groin, Genitalia |
| 7. | Sani | - | Thigh |
| 8. | Raagu | - | Hands |
| 9. | Kedhu | - | Legs |

Each of these rasis and the organs of impact as well as the Girahams are found to be related with the resultant diseases of corresponding organs. Therefore, the human body is impregnated with the vital forces that could be acted upon by the astronomical bodies in the sky. With the augmented spiritual force, a sage is able to get control over the above said planets. All the others are under the influence of the forces exhibited by these asteroids.

READING BETWEEN THE LINES OF KAAKKAI VALI

4.1 ACCORDING TO AGATHIYAR VAITHIYA KAANDAM,

காக்கை வலி

அறியுங் காக்கை வலிதானும்
அலரும் கண்ணும் மேல் நோக்கி
பிரியு மலமுஞ் சலநீரும்
பெருகிக் காற்றுடைய மடக்காமல்
செறியுந் தொண்டை நாவுலர்ந்து
சிலேத்மம் மிஞ்சிச் சளிவேர்வை
குறியாம் வாத பித்தமையங்
கொண்ட சன்னி யிதுதானே

_ நோய் நாடல் நோய் முதல் நாடல் திரட்டு இரண்டாம் பாகம்
(அகத்தியர் வைத்திய காண்டம் 600)
பாடல் எண் -02

பொழிப்புரை:

- ❖ கண்கள் மேல் நோக்கி மலர மலர விழித்தல்
- ❖ சிறுநீரும் மலமும் அதிகமாக போதல்
- ❖ கை,கால் மடக்க முடியாமல் விறைத்துக் கொள்ளல்
- ❖ தொண்டையும் நாவும் உலர்தல்
- ❖ ஐயப் பெருக்கினால் தொண்டையில் கோழை கட்டல்
- ❖ வியர்வையுண்டாதல்
- ❖ சன்னி குறிகுணங்கள் உண்டாதல்

4.2 ACCORDING TO T.V.S DICTIONARY,

S.N O	WORDS FROM POEM	TAMIL MEANING	ENGLISH MEANING	LEXICON T.V.Sambasivam pillai
1	வலி	இழுப்பு ,ஓர்நோய்	Convulsions,Fits, Contraction of limbs	Pg.No1015-vol 5
2	அலர்தல்	விரிதல்,அலருதல்	Expanding	Pg.No.447-vol 1
3	கண்	விழி,ஐம்பொறிகளில் ஒன்று	Eye	Pg.No.1014-vol 2
4	மலம்	அழுக்கு உடம்பினிருந்து சுழலும் கழிவுப் பொருள்கள்	Excretions of the body	Pg.No.734-vol 5
5	சலம்	மூத்திரம்	Urine	Pg.No.1939-vol 3
6	கால்	பாதம், அதக்காயம்	Leg,Lower limb	Pg.No.1014-vol 2
7	கை	கரம்	Hand	Pg.No.1036-vol 2
8	தொண்டை	சீரணப்பாதையின் ஓர் பகுதி	Throat	Pg.No.1416-vol 2
9	சிலேத்துமம்	கோழை,கபம்	Expectorant,Sputum	Pg.No.2197-vol 3
10	சளி	கோழை	Phlegm,Mucous	Pg.No.1966-vol 3

11	சுன்னி		Apoplexy includes Delirium and tetanus and is best defined by early motion resulting from the affection of the nerves through the derangement of the three humours in the system.	Pg.No.1966-vol 3
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4.3 BREAK UP SYMPTOMATOLOGY

காக்கை வலி	GRANDMAL EPILEPSY
“அலரும் கண்ணும் மேல் நோக்கி”	Tonic phase begins with eyelids open , eyes look up..... (Ref: Textbook of Medicine , PANDA pg.no.696)
“பிரியு மலமுஞ் சலநீரும் பெருகிக் “	Tonic phase is characterized by Urinary or Faecal incontinence..... (Ref: Davidson’s Principles and Practice of Medicine,19 th edition Page.no.1124)
“காற்றுடையு மடக்காமல் “	Clonic phase is associated with contraction of axial then limb muscles (Ref: Textbook of Medicine , PANDA pg.no.696)
“சிலேத்தம் மிஞ்சிச் சளிவேர்வை”	Clonic phase is characterized by Sweating, Excessive salivation etc... (Ref: Textbook of Medicine , Krishnadas Pg.No.354)
“வாத பித்தமையங் கொண்ட சன்னி யிதுதானே”	In Postictal phase the patient gradually regains consciousness but is in a confused and disoriented state (Ref: Davidson’s Principles and Practice of Medicine,19 th edition Page.no.1124)

4.4ANALOGY OF AGATHIYAR’S LINES & QUOTINGS FROM MODERN TEXTS

AGATHIYAR’S PHRASES (ABOUT KAAKKAI VALI)

“அலரும் கண்ணும் மேல் நோக்கி”

QUOTINGS FROM MODERN TEXT (ABOUT GRANDMAL EPILEPSY)

- ❖Tonic phase usually begins with sudden tonic contraction of axial musculature, accompanied by upward eye deviation and pupillary dilatation.

**Neurology in Clinical Practice 5th edition, Voulme-2
Page.no.1918**

- ❖Tonic phase begins with eyelids open , eyes look up.....

Ref: Textbook of Medicine , PANDA pg.no.696

**AGATHIYAR'S PHRASES
(ABOUT KAAKKAI VALI)**

“பிரியு மலமுஞ் சலநீரும் பெருகிக்”

**QUOTINGS FROM MODERN TEXT
(ABOUT GRANDMAL EPILEPSY)**

❖ Bladder or bowel incontinence may occur...

Harrison's Internal medicine, 16th edition, Page.No.2359

❖ There may be incontinence of urine and faeces.

Kumar & Clark Clinical medicine, 5th edition Page.No.1174

❖ Tonic phase is characterized by Urinary or Faecal incontinence.....

Davidson's Principles and Practice of Medicine, 19th edition Page.no.1124

❖ Urinary or faecal incontinence or both may occur at this stage.

Oxford Text book of Medicine, Volume-3, 4th edition, Page.No.1004

❖ Urinary incontinence is common, faecal incontinence is rare.

Cecil textbook of Medicine, 22nd edition Page.No.2260

**AGATHIYAR'S PHRASES
(ABOUT KAAKKAI VALI)**

“காற்றுடைய மடக்காமல்”

**QUOTINGS FROM MODERN TEXT
(ABOUT GRANDMAL EPILEPSY)**

- ❖ The initial phase of seizure is usually tonic contraction of muscles throughout the body.

Harrison's Internal medicine, 16th edition, Page.No.2359

- ❖ The tonic phase is associated with contraction of axial then limb muscles

Oxford Text book of Medicine Volume-3 ,4th edition,Page.No.1004

- ❖ Tonic clonic seizures are characterized by abrupt loss of consciousness with bilateral tonic extension of the trunk and limbs.

Cecil textbook of Medicine, 22nd edition Page.No.2260

- ❖ Tonic phase usually begins with sudden tonic contraction of axial musculature, accompanied by upward eye deviation and papillary dilatation.

**Neurology in Clinical Practice 5th edition, Volume-2
Page.no.1918**

- ❖ Clonic phase is associated with contraction of axial then limb muscles

Textbook of Medicine , PANDA pg.no.696

**AGATHIYAR'S PHRASES
(ABOUT KAAKKAI VALI)**

“தொண்டை நாவுலர்ந்து”

QUOTINGS FROM MODERN TEXT

(ABOUT GRANDMAL EPILEPSY)

- ❖ Dryness of the tongue and throat is caused due to Drooling i.e Excessive salivation

www.rightdiagnosis.com

**AGATHIYAR'S PHRASES
(ABOUT KAAKKAI VALI)**

“சிலேத்தம் மிஞ்சிச் சளிவேர்வை”

QUOTINGS FROM MODERN TEXT

(ABOUT GRANDMAL EPILEPSY)

- ❖ Clonic phase is characterized by Sweating, Excessive salivation etc...
Textbook of Medicine , Krishnadas Page.No.354
- ❖ Postictal phase is characterized by excessive salivation that can cause stridorous breathing and partial airway obstruction, unresponsiveness, muscular flaccidity.

Harrison's Internal medicine, 16th edition, Page.No.2359

**AGATHIYAR'S PHRASES
(ABOUT KAAKKAI VALI)**

“வாத பித்தமையங் கொண்ட சன்னி யிதுதானே”

**QUOTINGS FROM MODERN TEXT
(ABOUT GRANDMAL EPILEPSY)**

❖ In Postictal phase the patient gradually regains consciousness but is in a confused and disoriented state

**Davidson's Principles and Practice of Medicine, 19th edition
Page.no.1124**

❖ In Postictal phase, the patient then goes rigid and becomes unconscious.

**Davidson's Principles and Practice of Medicine, 19th edition
Page.no.1124**

❖ Seizures are usually self limiting followed by confusion or coma, drowsiness for several hours.

Kumar & Clark Clinical medicine, 5th edition Page.No.1174

❖ If the patient wakes initial confusion and disorientation is the norm.

**Oxford Text book of Medicine, Volume-3 4th
edition, Page.No.1004**

❖ The Postictal phase is marked by transient deep stupor followed in 15 to 30 minutes by lethargic confused state with automatic behaviour.

Cecil textbook of Medicine, 22nd edition Page.No.2260

❖ In the final period, the person generally is unresponsive.

**Neurology in Clinical Practice 5th edition, Volume-2
Page.no.1918**

4.5 READING BEWEEEN AGATHIYAR’S LINES

AGATHIYAR’S PHRASES (ABOUT KAAKKAI VALI)

“அறியுங் காக்கை வலிதானும்
அலரும் கண்ணும் மேல் நோக்கி”

In these Lines, Sage Agathiyar explains about the tonic phase which begins with eyelids open and there will be deviation of the eye and there will be incontinence of urine and faeces.

Convulsion was due to imbalance between the excitatory neurotransmitter (Acetyl choline) and inhibitory neurotransmitter (Gamma Amino Butyric Acid) which leads to abnormal electrical discharge between neurons.

Failure of the anal sphincter to prevent involuntary expulsion of gas, liquid or solids from the lower bowel. Inability of a usually continent person to reach the toilet in time to avoid unintentional loss of urine.

**AGATHIYAR'S PHRASES
(ABOUT KAAKKAI VALI)**

“பெருகிக் காற்றுடையு மடக்காமல்
செறியுந் தொண்டை நாவுலர்ந்து
சிலேதம்ம் மிஞ்சிச் சளிவேர்வை”

In these Lines, Sage Agathiyar explains about Clonic phase of Tonic clonic seizures. There will be contraction of axial muscles then limb muscles, Dryness of the tongue, throat and Excessive salivation. This was due to clear the tracheobronchial secretion and is produced by rise in intra-bronchial or intra tracheal pressure against closed glottis.

It is also produced by stimulation of the sensory nerves of the mucosa of the pharynx, larynx, trachea and bronchi by inflammatory, mechanical, chemical and thermal stimuli.

**AGATHIYAR'S PHRASES
(ABOUT KAAKKAI VALI)**

“குறியாம் வாத பித்தமையங்
கொண்ட சன்னி யிதுதானே”

In these Lines, Sage Agathiyar explains about Postictal phase of Tonic clonic seizures. In this state, the patient will be in disoriented state for some minutes after the seizures attack and then the patient regains consciousness. Loss of consciousness may occur as the result of brain hypoxia that depress the activity of the central nervous system. Normally, Reticular Activating System (RAS) in the brainstem contracts our ability to be awake, to sleep and to pay attention. Any injury to the brain, oxygen deprivation of the brain, certain drugs and electrolyte changes can affect these centres and leads to unconsciousness.

On analysing the whole poem , Sage Agathiyar has explained clearly about the Stages and symptoms of Tonic clonic Seizures i.e. Grandmal Epilepsy.

REVIEW OF LITERATURE – KAAKKAI VALI

5.1 KAAKKAI VALI

It is one of the types of Valipu noi.

5.1.A. According to Pothu Maruthuvam,

வலி நோய்

இந்நோய் அறிவு குன்றி தன்நிலை மாறுபாடடைந்து தன்னை அறியாமலே கையுங் காலும் வலித்து இழுத்தல், வாயில் நுரை தள்ளல், வாய் கோணிக் கொள்ளுதல், கண் பார்வை ஒரு புறமாக இழுத்துக் கொள்ளல் என்னும் இயல்புடையதாகும்.

According to Balavagadam,

வலிப்பு

வலிப்பு என்பது வலித்தல் என்றும் பொருளது. வலித்தல் என்பது காலையும் கையையும் முறுக்கி இழுத்தல் என்னும் பொருளில் நிற்கின்றது.

5.1B. வேறு பெயர்கள்

இசிவு

இழுப்பு

இசிப்பு

5.2 .AETIOLOGY OF VALI NOI

5.2.A. According to Pothu Maruthuvam,

“காணவே மேகத்தின் காங்கை யாலும்
கடிதான வழிநடக்கை கோபத்தாலும்
பூணலே பிரமாலயம் தேவா லயங்கள்
புகழான வேரிகுளம் பின்னஞ் செய்தோர்
நாணவே பெண்டிற்கற் பழித்தலாலும்
நலமான போகங்கள் மிஞ்சலாலும்
தோணவே காலபேத நடக்கையாலும்
துலையாத வடைக்கலத்தை பரித்தோர்க் காமே

பரித்துமே சீதளமாம் பண்டத்தாலும்
பாங்கான லபிகடந்த ஞானி யோரை
சிரித்துமே பரியாசஞ் செய்து மல்லே
சீண்டியே யடிக்கடிக்கு இடரே செய்து
குறித்துமே மனனோக மிகவும் பேசிக்
குடிகெடுக்கும் பாவிக்கு இந்த ரோகம்
நெரிந்துமே சண்டாள வலிதா நாகி
நெருங்குமே சண்டாள வலிதா னாகி
நெருங்குமே யிவ்வலியிம் நொறுங்கு வாரே.”

இந்நோய் மேக நோய்க்குத் தொடர்பாக வரும் என
உணர்த்தும். அன்றியும் உடல் நிலையும் மனநிலையும் கெடுதலாலும்
வரும். அவைகள் ஐயத்தைப் பெருக்கக்கூடிய உணவு வகைகளும்
பெண்ணிச்சையில் பெரிதுமீதுபடல், பெரும் ஞானிகளைப் பழித்தலாகிய
நடக்கைகளும்.

5.2.B. According to Sirappu Maruthuvam,

- மேகச்சூடு
- அதிக தொலைவு நடத்தல்
- கோபம்
- கெட்ட நடத்தை
- அதிகமாக பாலின்பம் துய்த்தல்
- கால இயல்புக்கு மாறுதலாக நடத்தல்
- குளிர்ந்த தன்மையுள்ள பண்டங்களை உண்ணல்

5.2.C. According to Balavagadam,

“நாணவே யூர்முசல நோடு நாகன்
நாரைவலி யசுவனொடு மேட மாமே
ஆமையொடு மாட்டுவலி நீர்மண் டீகம்
அப்பனே பறவைவலி யோணான் குக்கல்
கோமளமாங் குசலந்தோள் மத்த கண்டன்
கோரனோடு சீதாங்கன் குமரகண்டன்
கேமமதாய்ப் பதினெட்டு வலியா மாந்தம்

தன்னிமையால் நோய் உதிக்கும் வாறே தென்னில்
தன்வயது பதினெட்டா மிந்நாட் குள்ளே
உன்னிமைக்குள் தீனியினால் கர்மத்தாலும்
உடம்பினுள்ள சூட்டாலும் வினையினாலும்
வென்னிமையாய் நோயுதித்த வாறி தாகும்
விபரமென்ன கந்தாதி கியாழ மேற்று
சொன்னிமைக்குள் ஓடிவிடும் இக்கு ணந்தான்
சூதில்லா நூலிதுவாம் முன்னு றென்னே.”

ஐயமானது உடலில் எங்குசேர்வதாயினும் சிறப்பாக மார்பிலும், மூச்சுக்குழலிலும் அடைத்து அதனால் சுவை ,ஒளி ,ஊறு ,ஓசை ,நாற்றம் என்னும் ஐந்தறிவுகளும் கெட்டுத் தன்னை மறந்துண்டாவதும், வலிநின்ற பின் தன்னறிவு தோன்றுவதாகும்.

5.2.D.According to **Uyir Kaakum Siddha Maruthuvam**,

“அருந்தும் பண்டந் தன்கைலே யரியா மந்தம் பற்றியே தான்
தருந்தும் வலிப்பு மயக்கமுந்தான் தீரா யிசிவு பற்கடியும்
குருந்து மன்னந் தண்ணீரும் குளிரச் சத்தி செல்லாது
பருந்துந் சன்னி பற்கிட்டும் பகர்ந்தார் முனிவர் பகர்ந்தாரே.”

Excessive intake of foods leads to indigestion (Mandham) that results in

❖ **Convulsion**

❖ Unconsciousness

❖ Biting of teeth

❖ Unable to take food and water .

5.2.E.According to **Kooshaya Anuboga Vaithiya Brahma Rayasiyam (II part)**,

Excessive intake of foods that produces indigestion (Mandham) and causes.

❖ **Convulsion**

❖ Unconsciousness

❖ Biting of teeth and

❖ Unable to take food and water

5.2.F. According to **Aathma Ratchaamirtham – Vaithiya Saara saagiragam**,

Excessive intake of foods that leads to indigestion (Mandham) and produces.

- ❖ Convulsion
- ❖ Unconsciousness
- ❖ Biting of teeth and
- ❖ Unable to take food and water

5.2.G. According to **Roga Nirnaya Saaram**,

- ❖ Heaviness
- ❖ Weakness of born
- ❖ Passage or supply of deoxygenated blood to the brain and
- ❖ Infections

5.2.H. According to **Baala Vaagadam – Pillai Pini Maruthuvam**,

Accumulation of excessive Iyam especially in chest and respiratory passage that produces fits.

5.3. INTRODUCTION TO VATHAM (VALI)

According to T.V. Sambasivam Pillai, the Vali is defined as the one of the three humors (life forces), occupying the region below the navel. It is responsible for all movements in the body. It spreads throughout the body and causes respiration, hunger, thirst etc. It is the energy or power that prevails all over the body keeping the various tissues in good condition.

Vali is soft, fine and the temperature (coolness and hotness) could be felt by touch. It is one of the uyir thathu. It is aatharam for three humours.

"ஆமப்பா மூன்று பேர்க்கும் ஆதாரம் வாயுவாகும்

ஏமப்பா வாயு சேரில் எண்பிலம் உடைத்தாய் நிற்கும்".

- அகத்தியர் வைத்திய காவியம் 1500

5.3.A. THE SITES OF VALI

"அறிந்திடும் எல்லாம் ஒன்றாய் ஆவிக்கும் அதிர்வானந்தான்

செறிந்திடும் பித்தம் தானும் சேர்ந்திடும் நாவிலே தான்

முறிந்திடும் வன்னிதானும் மூடிடும் கண்ணிலே தான்

பறிந்திடும் வாய்வு தானும் பரிசிக்கும் எங்கும் பாரே"

- அகத்தியர் வைத்திய காவியம்.

According to **Agasthiyar Vaithiya Kaviyam**, the Vali exists all over the body. umbilicus and navel region.

5.3.B.CHARACTERS OF VALI

S No	Own characters	Opposite character
1.	Kadinam - Rough	Mirudhu - Soft
2.	Varatchi - Dry	Pasumai - Unctuous
3.	Elasu - Light	Baluvu - Heavy
4.	Kulirchi - Cold	Akhini - Hot
5.	Asidhal - Unstable	Sthiram - Stable
6.	Anuththuvam - Stable	Katti - Solid

5.3.C.CAUSES FOR VALI DISEASES

"என்னவோ வாதந்தா னெண்ப தாகும்
மிகுத்திலே மனிதர்களுக் கெய்து மாறு
பின்னவே பொந்தனையே சோரஞ் செய்து
பெரியோர்கள் பிராமணரைத் தூஷ ணித்தும்
வன்னவே வச்சொத்திற் சோரஞ் செய்து
மாதாபிதா குருவை மறந்து பேர்க்கும்
கன்னவே வேதத்தை நிந்தைசெய்த பேர்க்குங்
காயத்திற் கலந்திடுமே வாதந் தானே"
"தானென்ற கசப்போடு துவர்ப்பு ரைப்பு
சாதகமாய் மிஞ்சுகினுஞ் சமைத்த வன்னம்
ஆனென்ற வாறினது பொசித்த லாலும்
ஆகாயத் தேறலது குடித்த லாலும்

பானென்ற பகலுறக்க மிராவி ழிப்பு
பட்டினியே மிகவறுதல் பார மெய்தல்
தேனென்ற மொழியாற் மேற் சிந்தை யாகில்
சீக்கிரமாய் வாதமது செனிக்குந் தானே"

"ஆணான வரன்றனையே மதியா மாந்தர்
அகதிபர தேசியர்கட் கன்ன மீயார்
கோனான குரமொழியை மறந்த பேர்கள்
கொலைகளவு பொய்காமங் குறித்த பேர்க்கு
ஊனான சடந்தன்னில் வாதம் வந்து
உற்பவிக்கும் வேதத்தி லுண்மை தானே."

- யூகி வைத்திய சிந்தாமணி.

According to **Yugi Vaithiya Sinthamani** those who are squandering money, insulting the elders ,forgetting the parents, criticizing the holy books, not respecting the divine gifts , having wickedness in their mind and those with day slumber and staying back at night times will get Vali diseases.

Increased intake of bitter, astringent, hot tastes, increased Intake of water, increased starvation, and increased sexual desire will produce Vali diseases.

5.3.D.வாத நோய்க்கான இயல்பு

(CLINICAL FEATURES OF VITIATED VATHA HUMOUR)

வாதமே கதித்த போது வாயுவுமெழும்புங் கண்டீர்
வாதமே கதித்த போது வாயுவந்திடுஞ் சன்னி தோஷம்
வாதமே கதித்த போது வல்லடுன் மெலிந்து கொல்லும்

- அகத்தியர் சிகிச்சா ரத்னா தீபம்

According to **Agathiyar sikicha rathna deepam** , any derangement in vali will Produce delirium and emaciation.

"வாதவீறு அன்னமிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்
மோதுகட்கு ரோகம் சுரமுண்டா மிருமலுமா முறங்காதென்றும்
ஓதரிய வாதமனலாகு நடுக்கமுண்டாம் பொருள்களயர்ந்த
தீதெனவே நரம்பித்து சந்துகள் தோறுங்கடக்குந் தினமுந்தானே"

- தேரையர் வாகடம்

According to **Theraiyar Vagadam**, deranged vali produces loss of Appetite, fever, cough, insomnia, shivering of the body, nervine disorders, and pain in all the Joints.

5.3.E.FUNCTIONS OF DERANGED VALI:

(Altered functions of vali)

“வாதமே கதித்த போது வாயுவு மெழும்பி மீளும்
வாதமே யிரும லாகித் தொடர்ந்திடுஞ் சன்னி வாதம்
பேதமே செய்கி ராணி பெறுவயிறுதா தோஷம்
போதவே தோன்று மென்று பொருந்தவே முனிவர் சொன்னார்.

வாதமே முதலா நாடி வாதமே தூல காயம்
வாதமே பெலவா னாகும் யழலை வேண்டும்

வாதமே மந்தம் பற்றும் வாதமே சீத காலம்
வாதமே யுடற்கு ளிர்ச்சி வாதமே மூலமாமே.

வாதமே வாயு வாகும் வாதமே காலிற் சேரும்
வாதமே நன்னி யோடு மருவிடில் வலியுமுண்டாம்
வாதமே விடியப் பத்து வாதமே சாயங் காலம்
வாதமே புளிப்பு வாங்கும் வாதமுந் தளர்ச்சி காலம்.”

- பரராச சேகரம்.

According to **Pararasa sekaram** the deranged Vali will produce cough, delirium, diarrhoea and abdominal distension.

“வாதவீறு அன்ன மிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்
மோது கட்டு ரோகம் சுரமுண்டா மிருமலுமா முறங்க

- தேரையர் வாகடம்.

"பாங்கான வாதந்தான் மீறுமாகில்
 பருவயிறு சுவாசமுடன் குத்துக்கோழை
 நீங்காத பிடிப்புளைவு வாயு தொந்தம்
 நீர்வெடித்துப் பாய்தல் மந்தம் விடமிப்பாதல்
 தூங்குசன்னி வாதசுர மதனிற் தோடந்
 தொகுத்த கிரா ணிக்கழிச்சலுதர தோடம்
 வாங்குபல வலிகுளிர்ச்சி குன்மவாத
 மலசலங்கட் டிடல்வாத வந்திப்பாமே"

- அங்காதிபாதம்

According to **Angaathipatham** the deranged Vali produces constipation, scanty micturition, and increased lacrimation with darkening of eyes, fissures in tongue, dysarthria, flatulence, abdominal distension, and cough with expectoration, indigestion and diarrhea.

According to **Theraiyar karisal**, the deranged Vali produces blackish discolouration of body, feverishness, increased sweating, indigestion, dyspnoea.

"மேவிய வாதஞ் செய்யுங் குணந்தனை வியம்பக் கேளா
 தாவியே வயிறு தந்தஞ் சந்துகள் பொருந்து நோவாம்
 சீவிய தாது நாசஞ் செறுத்துடன் சிறு நீர் வீழுங்
 காவியங் கண்ணினாளே மலமது கருகி வீழும்"

- அகத்தியர் வைத்திய காவியம் 1000

5.3.F.KINDS OF VAYU – 10

"முறைமையாம் பிராணனோ டபானன் வியானன்
 மூர்க்கமா முதானனொடு சமான னாகன்
 திறமையாங் கூர்மனோடு கிருக ரன்றான்
 தேவதத்த னொடுதனஞ் சயனு மாகும்."

- யூகி வைத்திய சிந்தாமணி 800.

Even though the vali is a single functional unit; it has got ten different forms and actions. The main vayus are

1. Praanan (Respiratory function)
2. Abaanan (excretory functions)
3. Vyaanan (Perfusion of oxygen & nutrients)

4. Udhaanan (Reverse peristalsis)
5. Samaanan (Homeostatic functions)
6. Naagan (Higher intellectual functions)
7. Koorman (Constrictory functions)
8. Kirukaran (Secretory functions)
9. Devadhaththan (Mental & physical sluggishness)
10. Dhananjayan (BLOATER of the body).

1. UYIR KAAL – PRAANAN (RESPIRATORY FUNCTIONS)

“பிறமையா மிதன்பிரிவு விராண வாயு
 பொருமூலா தாரத்தின் கட்டோன் றித்தான்
 உறமையா மசவையெனு மந்தி ரத்தால்
 ஓங்கார முதலெழுத்தை யுன்னித் தானே
 உன்னியே மேலெழுந்து பனிறண் டங்குலம்
 உயர்ந்தவெட்டங்குலந்தான் மீள வாங்கி
 நன்னி நாலங்குலந்தான் பாழிற் பாயும்
 நலமான குணமெல்லாம் பிராண வாயு
 பன்னவே நீலவண்ணம் தெய்வம் சந்திரன்
 பலப்பலவாம் பொசிப்பெல்லாம் சீர்ண மாகும்
 உன்னநா ழிகைமமுந் நூற் றறுபது சுவாசம்
 உயர்ந்தநா ளொன்றுக்கு மூச்சைக்கேளே
 நாளொன்றுக் கிருபத்தோ ராயத் தறுநூறு
 நலமான சுவசந்தா னெழுந்தி ருக்கும்
 கோளோன்றிப் பதினாலா யிரத்து நாடழ்
 குவித்தழ லாதாரத் தள்ளொ டுங்கும்
 பாலொன்றி யேழாயிரத் திருநூறு சுவாசம்
 பாழினிற் பாய்ந்திடுமென் றறிக் பின்னை
 ஏளொன்றி யிதனையே யுட்ச தித்தல்
 எப்போதும் பாலரா யிருக்க லாமே!”

- யூகி வைத்திய சிந்தாமணி.

This is the first of the ten vital Vathams. According to yugi Muni, Praanan starts from Moolatharam and comes through the nostril and does inspiration and expiration. The inspiration and expiration is not uniform as the ratio is 8:12, there by the process of respiration is not complete. The pranana helps in the digestion of ingested food.

This is blue in colour and the Moon is its deity. For one nashigai i.e. 24 minutes, there will be 360 inspirations. So there will be 21,600 breathings altogether in a day. Out of this, 14,400 inspirations is utilized by the body and the rest will go waste.

2. KEEL NOKKU KAAL – ABAANAN (EXCRETORY FUNCTIONS):

“இருக்கவே யபானத்தின் னியக்கங் கேளாய்
ஏற்றசுவா திட்டானத் துற்பத்தி யாகும்
மருக்கவே கீழ் நோக்கி மலசலந் தள்ளும்
வாகாக நிறந்தானும் பச்சை யாகும்
அருக்கவே யாசனத்தைச் சுருக்கி வைக்கும்
அன்னசா ரத்தையெலாஞ் சேர வைக்கும்
திருக்கவே தேவதையும் வரத ராஜன்
திரமான் வியானனிட சிறப்பைக் கேளே!”

- யுகி வைத்திய சிந்தாமணி

Abaanan, the downward Air, starts from Swathittanam and descends down and is responsible for excretion of urine and feces. This is green in colour. It contracts the anus. It helps to take the essence of the digested food to different parts of the body, which requires food. The God attributed is Varadarajan.

3. PARAVU KAAL–VYAANAN (PERFUSION OF OXYGEN & NUTRIENTS):

“சிறப்பான வியானனது தோலி னின்று
திகழெழுபத் தீராயிர நரம்பிற் சென்று
தறுப்பான் சரவசரந் தனிலே நின்று
தானீட்டல் முடக்கல் பண்ணிப் பரிசுமறியும்
அறுப்பான் வன்னசா ரந்தன் னைத்தான்
ஆங்காங்கே நிரைப்பித்தாக் கையைக் காக்கும்

பறப்பான ததுபாலின் வண்ண மாகும்

பாரதனிற் றெய்வந்தா னேம னாமே."

- யூகி வைத்திய சிந்தாமணி.

Viyanan arises from the skin and goes through all the 72,000 nerves and thus activates voluntary and involuntary movements of the body and thus make them to extend or flex. This appreciates the sense of touch; helps to take essence of the food to the strategic points of the body and guards the body. The colour of Vyana is milky white, and the Deity is Eman.

4. MAEL NOKKU KAAL – UDHAANAN (REVERSE PERISTALSIS);

"ஏமனா முதானனிட வேற்றங் கேளாய்

ஏழிலான வுதரவக் கினியெ முப்பிப்

பூமனா மன்னசா ரந்த னைத்தான்

பொருந்தவே சமீபத்து நிறுத்தி வைக்கும்

காமனா யெடுப்பித்தும் கலக்கி வைத்தும்

கலக்கியே வருத்துவிக்கும் வயப்பாகும்

வீமனா மின்னினிட வண்ண மாகும்

வியங்கியதோ ரக்கினிதான் தெய்வ மாமே."

- யூகி வைத்திய சிந்தாமணி.

Udhanan starts from the umbilical region (Udarakkini) and takes the essence of food and stagnate it at appropriate places. It helps in digestion and assimilation of food. The colour of Udhanan is that of lighting, and the Deity is the God of fire.

5. NADU KAAL – SAMANAN (HOMEOSTATIC FUNCTIONS):

"ஆமென்ற சமானனிட வாண்மை கேளாய்

நேடிநாபி பாதாங்கஞ் சமன்கொண்டேகி

வாமென்ற வாயுவின் மிஞ்சொட் டாமல்

மடக்கியே சமன்செய்து மருவப் பண்ணும்

தாமென்ற அறுசுவையைத் தண்ணீ ரன்னம்

சமன்செய்து சரீரமெலாஞ் சாரப் பண்ணும்

வாமென்ற வண்ணமது புட்ட ராகம்

மகத்தான தெய்வமா தித்த னாமே."

- யூகி வைத்திய சிந்தாமணி

Samaanan starts from the umbilical cord, spread out up to the lower limb. This is responsible for the balance of the other four Vatham. It equalizes the six tastes, water, food etc., and helps in assimilation. Samanan is topaz coloured and the God is the Sun.

6. NAAGAN (HIGHER INTELLECTUAL FUNCTIONS):

"தெய்வமா நாகனிட சிறப்பைக் கேளாய்
செயலான சகலகலை யாக்கு வித்துப்
பய்வமாய்ப் பாடுவிக்கும் கண்விழிக்கும்
பாங்காக வேசிமிழ்க்கும் ரோம மசைக்கும்
பெய்வமாம் பொன்னினிட வண்ணமாகும்
பெரிதான தெய்வந்தா னைந்த னாகும்."
- யூகி வைத்திய சிந்தாமணி.

Naagan is responsible for higher intellectual functions, hearing, thinking etc., It causes closing and opening of the eye lids. The color is Gold and Deity is Ananthan.

7. KOORMAN (CONSTRICATORY AND VISUAL ASSOCIATION FUNCTIONS).

"கொய்வமாங் கூர்மனிட குணத்தைக் கேளாய்
கொடிய மனத்தினின்று நிமைக்கொட் டும்மே
நிமைகொட்டுங் கொட்டாவி தானுங் கொள்ளும்
நேராக வாய்மூடும் பலனுண் டாக்கும்
கமைக்கொட்டுங் கண்விழிக்கும் மூடப் பண்ணும்
காட்சியெலாங் காண்பிக்கும் விழி நீரோடுங்
இமை கொட்டும் வண்ணமது வெளுப்பதாகும்
மேலான தெய்வந்தான் விண்டு வாகும்!
- யூகி வைத்திய சிந்தாமணி.

Koorman starts from the mind and causes blinking of the eyelids, yawning and closure of mouth. It gives strength and helps to visualize things and causes lacrimal secretion. The God is Vishnu and its color is white (pale).

8. KIRUKARAN (SECRETORY FUNCTIONS):

“கமைகொட்டுங் கிருகரன்றன் குணத்தைக் கேளாய்

கசினாவு நாசிதனிற் கசிவுண்டாமே

கசிவுண்டாங் கடும்பசியிற்கென்மஞ் செல்லும்

கண்ணியே யிருத்தலோடு போத லாகும்

துசிவுண்டாய்த் தும்மலோ டிரும லுண்டாம்

கயமான வண்யமது கறுபட தாகும்

நேசிவுண்டாந் தெய்வமது சிவன்றா னாகும்

திரோததயின் கூறான திறமு மாகும்.”

- யூகி வைத்திய சிந்தாமணி

Kirukaran lies in the tongue and causes nasal and salivary secretions. It induces hunger; it makes to concentrate on one thing. Sneezing and cough are attributed to kirukaran. It is black in colour. The God is Siva.

9. DEVADATHTHAN (PHYSICAL & MENTAL SLUGGISHNESS):

“குசிவுண்டாந் தேவதத்தன் குணத்தைக் கேளாய்

குடிலமாய்ச் சோம்பிமுரித்த லாமே

முரித்திடுதல் விழிக்கும்போ தயர்ச்சி யாகி

முகுளிதயமாய்க் கண்ணையோட் டுலாவு வித்துக்

துரித்திடுதல் சண்டை கொளல் தர்க்கம் பேசல்

சண்டாள கோபத்தை யுண்டு பண்ணல்

குறித்திடுதல் குதங்குய்யந் தன்னில்

கூந்ததெய்வந் தேவேந்திரன் படிக வண்ணம்.” !

- யூகி வைத்திய சிந்தாமணி.

Laziness is attributed to Devadaththan. Ocular movements and human passions are attributed to this Vatham. It stays either at the anus or at urinary orifice. The colour is that of a crystal and the God is Devandran.

10. DHANANJAYAN (BLOATER OF THE BODY):

“தரித்திடுதல் தனஞ்சயனைச் சாற்றக் கேளாய்

சாங்கமாய் மூக்கினின்றுந் தடிக்குந் தானே

தடித்துமே யுடம்பெல்லாம் வீங்கப் பண்ணும்

தந்திரமாய்க் கன்னத்திற் சமுத்திரம் போல

துடித்துமே சுந்தரமாய்க் கோஷ் மாகித்
 திரண்டுமே துஞ்சுகா லந்த னிற்றான்
 வுடித்துமே வாயுவெல்லாம் போன பின்பு
 வுளமான தலைவெடிக்கும் மூன்றாம் நாளில்
 ஆடித்துமே தலைவெடித்தா வாப்பாற் போகும்
 அதன் வண்ண நீல வெண்மையறிந்து கொள்ளே."
 - யூகி வைத்திய சிந்தாமணி.

Dhananjayan functions on the nose and it is responsible for the the smell and bloating of the body after death. The god is Dhanwantri and the color is blue.

5.4.CLINICAL FEATURES OF KAAKAI VALI

5.4.A.According to Uyir kaakum siddha maruthuvam,

காக்கை வலி நோயின் இயல்பு

பித்தம் உடம்பெங்கும் பாய்ந்து சித்தம் கலங்கி உணர்வற்று மயங்கி நாக்கை உதட்டை, மூக்கை, கண்ணை, புருவத்தை சேர்த்திழுத்து வலிப்புகண்டு உறுப்புகள் உதறி அலமலைத்துக் கீழே தள்ளும்.வாயில் வெண்ணுரை தள்ளும். மேல் சுவாசம் வாங்கும். இது வளி ஐய குற்றத்தால் உண்டாகும்.

(Page.No.254-1st edition)

5.4.B.According to T.V. Sambasivam Pillai,

காக்கை வலி

இதற்கு மிரிகி அல்லது அபசுமார ரோகம் என்று பெயர்.இந்நோய் நரம்பை அனசரிப்பதால் சீச்சுக் குரலுடன் உறக்கக் கூவல், அறிவும் உணர்ச்சியும் அழிந்து திடீரென பூமியில் விழுதல்,விரல்கள் முடங்கி பற்கள் கிட்டி புருவம் நெரித்து வாயிலிருந்து நுரை தள்ளல் மூச்சு முட்டல் கை கால் உதறி கொள்ளல் முதலிய சேஷ்டைகளுடன் பிராணன் விடுபவர்களைப் போல் குறிகளும் காணப்படும். இது மூளையைப் பற்றிய நோயாதலால் பித்தம் பரவி சித்தம் கலங்கி உதடு நாசி விழி முதலியன் சேர்த்து இழுப்பதுடன் வலிப்புங் காணும்.சிலர் கைகால் உதறாமலே உணர்ச்சியையும் அறிவையும் மீண்டும் பெறுவார்கள்.இதற்கு மனக்கவலை, அச்சம், முட்டி மைதுனம், குடி முதலிய பல காரணங்களைச்

செய்வதுண்டு.ஆனால் உண்மையான காரணம் இன்னதென்று விளங்கவில்லை.இதனால் சிலருக்கு பித்து பிடிப்பதுண்டு. குடும்பத்திலிருந்தாவது பெற்றோரிடமிருந்தாவது தொந்தத்தினால் இந்நோய் ஏற்படுவதென சொல்லிவிட முடியாது.

It is also known as Grandmal. It is a disease of the nervous system characterized by following symptoms namely uttering a strangled scream, loss of consciousness, drooping on the ground, fists and teeth tightly clenched, eyebrows twisted, white froth collecting on lips, panting laboriously arms and legs jerked backward and forward and other distressing features skin to those of a dying person. In some cases it leads to insanity. It is looked upon as the result of some local irritation of the brain surface due to deranged condition of the bilious humour prevailing the cerebral region consequently spasms begin with the facial region such as eyes, nose, lips, teeth etc.. and then spread to arms and legs giving rise to convulsive fits. The absence of convulsions is the chief point of difference between one variety and the other. Many are the causes ascribed to this disease such as mental worry, fear, masturbation, heavy drinking etc.. but the actual cause of true epilepsy is not known. It cannot even be said that it is due to a hereditary taint in the parents or anyone in the family as a predisposing cause to epilepsy in the offspring. (Page.No.1308-1309- Volume -2, 2nd edition)

5.4.C.According to **Pothu maruthuvam**,

“சாற்றினோம் கண்களையு மலரப் பார்க்கும்
சாங்கமாய் மலசலமுஞ் சருகி வீழும்
மாற்றினோஞ் சிலேட்டுமத்தில் பிறந்த ரோகம்
மயக்கமுடன் கால்கைகள் முறைத்துக் கொள்ளும்
கூற்றுவனாந் தொண்டைதனில் கோழை சேர்ந்து
குறிப்பான நாவுலரல் குளரிப் பேசும்
காற்றினிலும் வேகமதாய் ஒட்டிக் கொல்லும்
காலனாங் காக்கைவலி தன்மை யாமே”

5.4.D.According to **Balavagadam**,

காக்கை வலி

“காக்கை யிசிவு கபந்தள்ளி வாயில்மேல்
நோக்கின்றிக் கைகால் நுவலுமுன் காக்கை
வலிபோல் வலித்து மருவுநோக் குக்கெட்
டலிபோ லடங்கிவிட லாம்”

5.5.TYPES OF VALI NOI

5.5.A.According to **Anubava Vaithiya Deva ragasam**,

Vali was classified into **five types**. **Muyal vali** was one among them.

They are

- Amarakanda vali
- Kumara kanda vali
- Brahma kandavali
- **Kaakkai vali** and
- Muyal vali

5.5.B.According to **Pothu maruthuvam**,

- ❖ முப்பிணி வலி(குமரகண்டன்)
- ❖ குதிரை வலி (அமரகண்டன்)
- ❖ குரங்கு வலி (பிரமகண்டன்)
- ❖ **காக்கை வலி**
- ❖ முயல் வலி

1. முப்பிணி வலி(குமரகண்டன்)
2. குதிரை வலி (அமரகண்டன்)
3. குரங்கு வலி (பிரமகண்டன்)
4. **காக்கை வலி**
5. முயல் வலி
6. திமிர் வலி
7. கோணு வலி

8. சண்டாள வலி
9. மரண வலி
10. மனோ வலி
11. நஞ்சு வலி
12. முக்குற்ற வலி
13. ஐய வலி
14. வில் வலி
15. சுர வலி
16. விக்கல் வலி
17. தலை வலி
18. கோழை வலி
19. ஓடு வலி
20. மார்பு வலி
21. தமரக வலி

5.5.C.Types of Vali noi

குழந்தைகளில் வரும் வலிகள்:

❖ மாந்த வலி

❖ காக்ை வலி

❖ அள்ளு வலி

❖ புற இசிவு

என்பவையாம்

5.5.D. “முற்றான சிலேட்டுமனந்தா னிருந் தொன்று
முனியுரைத்த சொற்படியே மொழியக் கேளாய்
'சிற்றான விருமலாஞ் சிலேட்டுமத்தோடு
செறிகாசச் சிலேட்டுமாஞ் சுவாச சிலேட்டும்
மற்றான தீபன சிலேட்டுமத் தோடே
மந்த சிலேட்டும் வாதசிலேட்டும் மாகும்
துற்றானபித்த சிலேட்டும் தொந்த சிலேட்டுமஞ்
சுகசன்னி வாதசிலேட்டுமந் தானாமே
ஆகுமே சுரசிலேட்டுமம மதிசார சிலேட்டும்

முதிகசல சிலேட்டுமமா மக்கினி சிலேட்டுமம்
போகுமே பூதசிலேட்டுமம் முயலகன்றான்
போறிவெறிச் சிலேட்டுமமாம் விகார சிலேட்டுமம்
சோகுசுரோணித சிலேட்டுமம் விரண சிலேட்டுமந்
துர்கந்த சிலேட்டுமமா நித்திய சிலேட்டுமம்
நாகுமே இருபத்தொன்றாஞ் சிலேட்டுமம்
நாட்டினேன் வரலாறு நயந்து கேளே”

Iyaa Noi was classified into **twenty one types** they are

- Irumal Iyya Noi
- Kaasa Iyya Noi
- Swasa Iyya Noi
- Dhepana Iyya Noi
- Mantha Iyya Noi
- **Vali Iyya Noi**
- Azhal Iyya Noi
- Mukkutu Iyya Noi
- Suga Sanni Iyya Noi
- Sura Iyya Noi
- Adhisaara Iyya Noi
- Neerkovai Iyya Noi
- Anal Iyya Noi
- Boodha Iyya Noi
- Muyalaga Iyya Noi
- Veyri Iyya Noi
- Vighara Iyya Noi
- Suronidha Iyya Noi
- Virana Iyya noi
- Thurgandha Iyya noi and
- Anithiya Iyya noi

5.6.நாடி நடை

“சிறுலிர லிரண்டு பக்கம்
நாடிதான் சிதறி யோடில்
மருவிய காலுங் கையும்
வலித்துடன் மிகவே நோகும்”

இருகைகளிலும் நாடிகளை ஆராயுங்கால் மூன்று நாடிகளும்
சிதறியோடுமாகில் வலி நோயுண்டாகுமென அறிகிறோம்.

5.6.A.Vaatha Kaba Naadi

“பாங்கான வாதத்தில் சேத்தும நாடி
பரிசித்தால் திமிர்மேவு முளைச்சலாகும்
தீங்கான இருமலுடன் சன்னி தோடம்
சேர்ந்தவிடம் வெடிகுலை இருத் ரோகம்
வாங்காத ஈளை மந்தார காசம்
வலியுடனே புறவீச்சு உட்வீச்சு வீக்கம்
ஓங்காணுஞ் சுரமுடனே சுவாச காசம்
உண்டாகும் வெகுநோய்க்கு முறுதி தானே”

If there is any derangement in Vaatha& Kaba Naadi, Vali noi may occur.

5.6.B.Kaba Naadi

“கண்டாயோ சிலேற்பத்தின் வாத நாடி
கலந்திடுகில் வயிறுபொருமல் கனத்த வீக்கம்
உண்டாலோ ஓங்கார சத்தி விக்கல்
உறுதிரட்சை வாய்வுவலி சன்னி தோடம்
விண்டாலே இளைப்பிருமல் சோகை பாண்டு
விடபாகம் விடகுலை பக்க வாதம்
திண்டாடு நாசிகா பீடங் கக்கல்
சிரநோய்கள் பலவும்வந்து சிக்குந் தானே”

If there is any derangement in Kaba Naadi, Vali noi may occur.

5.6.C. Vaatha Naadi

“வாதமெனும் நாடியது தோன்றில்
சீதமந்தமொடு வயிறு பொருமல் திரட்சி வாய்வு
சீதமுறுங் கொராணி மகோதரம் நீராமை
திரள்வாய்வு சூலை வலிகடுப்புத் தீரை
நீதமுறுங் கிருமிகுன்மம் அண்ட வாதம்
நிலையும் நீர்க்கி ரிச்சரங்கள் தந்து மேகம்
பேதகமா முதரப்பிணி மூல ரோகம்
பேச வெகு பிணிகளுமே பொருள தாமே.”

If there is any derangement in Vaatha Naadi, Vali noi may occur.

5.6.D.வாதமிகுதியுடன் வாய்வுஞ் சேர்ந்தாலேற்படும் குறிகுணங்கள்:

“அடருகின்ற வாதத்திற் வாய்வு வந்து
அணுகினால் வலுவீச்சுத் திமிர் வியாதி
சுடருகின்ற வானந்த வாய்வு பக்க சூலை
தடைகுறுக்கு வலி பிடரி நஞ்சு
படருகின்ற நரம்புசிப்பி இடபக்க டோறும்
பரந்துகுத்திக் கொளுவித்து நஞ்சடைப்பு மாகும்
இடருறவே சீதமுண்டாங் கபம்பெந் திக்கும்
இதனாலே பலபிணிவந் திருக்கும் பாரே”

If Vatham combined with increased Vaatham it will cause Vali Noi.

5.6.E.பித்தமிகுதியுடன் வாய்வுஞ் சேர்ந்தாலேற்படும் குறிகுணங்கள்:

“வகையான பித்தத்தில் வாய்வு கூடி
வசமானால் வலிகுன்மஞ் சூலை வாய்வு
பகையான வாந்திவிக்கல் அருவ ருப்பு
பயித்தியங்கள் செரியாமை புளித்த ஏப்பம்
தகையான ஈரல்வலி நெஞ்சு நோவுந்
தலைகிறுக்கு மசதியாந் தாது நடட்டம்
துகைமுலை வாய்வுற்றா லுஷ்ணஞ் சோகை
தொடர்ந்துவரும் பலபிணிக்குந் தொனிப்பு தானே.”

If Pitham combined with increased Vaatham it will cause Vali Noi.

PATHOLOGY OF KAAKKAI VALI

The basic constitution of the body is made up of 96 Thathuvams. Due to diet and other activities 96 Thathuvams get deranged and result in diseases, either pertaining to body or mind.

1. Iymboothangal (Five elements)

1. Earth - Convulsions
2. Water - Urinary or faecal incontinence, sweating
3. Thee - Eyes looking upwards
4. Vaayu - Stiffness of the upper and lower limbs

2. a. Iymporigal (Penta sensors)

1. Mei -Joint pain
2. Vaai - Dryness of tongue ,Excessive salivation
3. Kan - Eyes looking upwards

2. b. Iyampulangal (Functions of Penta sensors)

1. Ozhi- Dullness of vision

3. Kanmenthiriyam/ Kanmavidayam (Motor organs)

1. Kaal –Stiffness of the lower limbs
2. Kai-Stiffness of the upper limbs
3. Eruvaai - Urinary or faecal continence

4. Naadi (Differential Pulse Perception)

1. Idakalai - Stiffness in the lower limbs
2. Pinkalai-Stiffness in the lower limbs
3. Suzhumunai-Body pain
4. sikuvai-Dryness of the throat
5. Purudan- Upward Eye deviation
6. Kanthaari-Upward Eye deviation
7. Sangini-Urinary incontinence
8. kugu-Faecal incontinence

5. Aadharam (Stations of soul)

1. Moolaathaaram - Urinary or faecal incontinence.

6. Anthakaranam (Components of mind)

1. Manam -Delirium
- 2.Puthi-Delirium
- 3.Siddham-Convulsions

7..Arivu-Convulsions

8.Aasayam

- 1.Malavasayam-Faecal incontinence
- 2.Salavasayam-Urinary incontinence

9. Mandalam (Body zone)

Thingal mandalam and Thee mandalam are found to be affected in the study.

10. Gunam (character)

All the three Gunam people are found to be affected in the study but thamasa gunmam affected more.

11. Vinai (Act)

Both Vinai gets affected in the study.

12. Kosam (Body systems)

Manomaya kosam - Delirium

Vizhanaamaya kosam - Convulsions

13. Deranged Uyir Thathukkal (Humoral or Tridosha Pathology)

Panchaboothams are manifested in the body as three vital forces,

- 1.Vatham
2. Pitham
3. Kabam

14. a. Vatham or Vaayu:

The word Vaayu not only implies wind but also comprehends all the phenomenon which comes under the function of the central and sympathetic nervous system. Structurally it is the combination of Vaayu and Aagaya boothams.

Normally it carries out of respiration, circulation of blood, locomotion, carrying sensory signals and motor signals to and from the brain, micturition, defecation, parturition, sensation of hearing, sight, taste etc. It is located in Idakalai, Abanan, Faeces, Spermatic cord, Pelvic Bones, Skin, Hair, Nerve & Muscle. It is of ten types, In Kaakkai vali primarily affected Vayukkal are Abaanan, Viyaanan, Samanan, Naagan, Koorman, Kirukaran and Devadhathan.

ALTERED UYIR THATHUKKAL

Vaayu:

Vayu is classified into ten types. Of these ten types, the following vaayus are affected.

Abaana vaayu (Keel nookungaal):

In this disease, Abaana vaayu is increased so, it leads to incontinence of motion and urine.

Viyaanan (Paravukkal):

Viyaanan is increased that leads to convulsions present all over the body, body ache and blackening of skin.

Uthannan (Melnokkal):

Uthannan is increased that leads to impaired consciousness.

Samanan (Nadukkal):

In this disease, Samaanan is increased.

Naagan:

In this disease, Naagan is increased. This leads to loss of consciousness during convulsion.

Koorman:

Koorman is increased in this disease and leads to increased lacrimation.

Kirukaran:

In this disease, Kirukaran increased and leads to excessive salivation.

Devathathan

In this disease, Devathathan is increased due to convulsions, body ache will be there.

14. b.Pitham

It is the life energy manifestation of “Thee Bootham” in the body. It is the metabolic thermal life force of the body. It carries out digestion, absorption, metabolism, and colouration of the blood etc. Pitham is located in the bladder, Moolaakini, Heart, Umbilical region, Abdomen, Stomach, Sweat, Saliva, Blood, Eyes and Skin. As Moolaatharam is in the Akkini mandalam, any pathological condition here can harm the Moolakini and eventually derange the Pitha humor. Symptoms are produced when deranged Pithams affect the seven Thathus and Malam. Azhal is classified into five types. The affected Azhal types are described below.

Saadhaga Pitham:

In this disease, Saadhaga pitham is decreased and this leads impaired consciousness.

Aalosaga Pitham:

In this disease, Aalosoga pitham is decreased and leads to unable to see and know the objects around the patients during convulsion.

14.c. Kabam

Kabam is constituted by Appu and Pirithivi boothams. It is responsible for Co-ordination and defense mechanism of the body. Kabam is located in Samaanavayu, Semen, Suzhumunai, Blood, Bone marrow, Nose, Chest, Nerve, Bone, Brain, Eyes, and Joints.

Avalambagam:

In kaakkai vali, Avalambagam is increased that leads to cough.

Santhigam:

In this disease, Santhigam is increased and leads to joint pain.

15. ALTERED UDAL THATHUKKAL**Saaram:**

In the disease, “Kaakkai vali” Saaram is decreased. This leads to body ache..

Oon:

Oon is decreased and leads to lethargy of five sense organ and Convulsions.

Kozhuppu:

Kozhuppu is also decreased and leads to weakness.

Moolai:

Moolai is also affected and leads to diminished vision during convulsion.

Sukkilam / Sronitham:

Premature ejaculation of sperm during convulsion and menstrual disturbances.

DIFFERENTIAL DIAGNOSIS FOR KAAKKAI VALI

1)முயல் வலி

“தானே முசல கண்வலிதான்
தண்ணீர் தீயுங் காண்போதில்
ஊனே உடலில் வாய்வெழுப்பி
உற்று முகத்தைத் தான்வலித்துத்
தேனே யொழுகும் வாய் தன்னில்
திரைபோல் நுரையுந் தள்ளிவிடும்
கானே கண்ணுங் கைகாலுங்
கனத்து முளைக்குஞ் சன்னியிதே”

SIMILARITIES:

காக்கை வலி	முயல் வலி
Contraction of axial and limb muscles	
“பெருகிக் காற்றுடையு மடக்காமல்”	“கானே கண்ணுங் கைகாலுங் கனத்து”
“சிலேத்தம் மிஞ்சிச் சளி”	“வாய் தன்னில் திரைபோல் நுரையுந் தள்ளிவிடும்”

CONTRASTING KAAKKAI VALI WITH MUYALAGA VALI:

KAAKKAI VALI	MUYALAGA VALI
Eyelids open up	Convulsions starts after seeing water or fire
Dryness of the throat	Abdominal pain
Dryness of tongue	Convulsions starts after pouring water in the head
Sweating	

2)முயலக சிலேத்துமம்

“தானான சடமெல்லாம் வலிப்பு காணுஞ்
சரீரத்தி லுணர்ச்சி தளர்ச்சி கேடாம்
வேனான கண்தானுஞ் சிவந்து காணும்
மிகக்கண்ணீர் பாய்ந்துமே மேனி கன்றும்
ஊனான உடம்பெங்குங் கருகிக் காணு
முறுதிமில் சலம்விழுதல் தெரிந்திடாது
மூனான மூச்சொடு விரும லாகு
மூர்க்கமா முயலசசி லேட்மம சாத்தியம்.”

SIMILARITIES:

காக்கை வலி	முயலக சிலேத்துமம்
Urinary or faecal incontinence	
“பிரியு மலமுஞ் சலநீரும் பெருகிக்”	“முறுதிமில் சலம்விழுதல் தெரிந்திடாது”
Excessive salivation	
“சிலேத்மம் மிஞ்சிச் சளி”	“விரும லாகும்”

CONTRASTING KAAKKAI VALI WITH MUYALAGA SILETHUMAM:

KAAKKAI VALI	MUYALAGASILETHUMAM
Incontinence of urine	Reddening of the eyes
Incontinence of faeces	Lacrimation
	Dyspnoea

3)குமரகண்ட வலி

“தானான கண்ணிரண்டு மிழுத்துக் கொள்ளல்
தாக்கான தடையது கோணிக் கொள்ளும்
பானான கழுத்தைமிகத் திருப்ப வொட்டா
பக்கமெல்லாம் நரம்பிழுத்துப் பிடரி நோவாம்
மானான சன்னிபாத மதிக மாகி
மயக்கமுட நெந்நேரம் வயிற்றில் நோவாம்
கானான கருப்பைக்குள் தங்கி நின்று
காட்டுமே குமரகண்ட தோட மாமே.”

SIMILARITIES:

காக்கை வலி	குமரகண்ட வலி
Contraction of axial and limb muscles	
“அலரும் கண்ணும் மேல் நோக்கி”	“கண்ணிரண்டு மிழுத்துக் கொள்ளல்”
Unconscious state.....	
“வாத பித்தமையங் கொண்ட சன்னி யிதுதானே”	“மானான சன்னிபாத மதிக மாகி”

CONTRASTING KAAKKAI VALI WITH KUMARAKANDA VALI:

KAAKKAI VALI	KUMARAKANDA VALI
Incontinence of urine	Stomach pain
Incontinence of faeces	Anger
unconsciousness	Body pain

4)அமரகண்ட வலி

“நெருங்குமே தேகமெங்கும் தினவுண்டாகி
நெடிதான மூர்ச்சையது மதிக மாகும்
குருங்குமே தந்தத்தை யிளித்துக் காட்டும்
கூரான நகந்தன்னால் சுறண்டிக் கொள்ளும்
தருங்கவே பிணம்போல வசதியாகும்
தரிக்கொணாக் குடைச்சலுடன் வியர்வை காணும்
பருகவே சோரியது கட்டிக் கொள்ளும்
பாங்கான வமரகண்ட வலிப்புத் தானே.”
காட்டுமே குமரகண்ட தோட மாமே.”

SIMILARITIES:

காக்கை வலி	அமரகண்ட வலி
Unconscious state.....	
“வாத பித்தமையங் கொண்ட சன்னி யிதுதானே”	“மூர்ச்சையது மதிக மாகும்”
Excessive Sweating.....	
“சிலேதம்ம் மிஞ்சிச் சளிவேர்வை”	“குடைச்சலுடன் வியர்வை காணும்”

CONTRASTING KAAKKAI VALI WITH AMARAKANDA VALI:

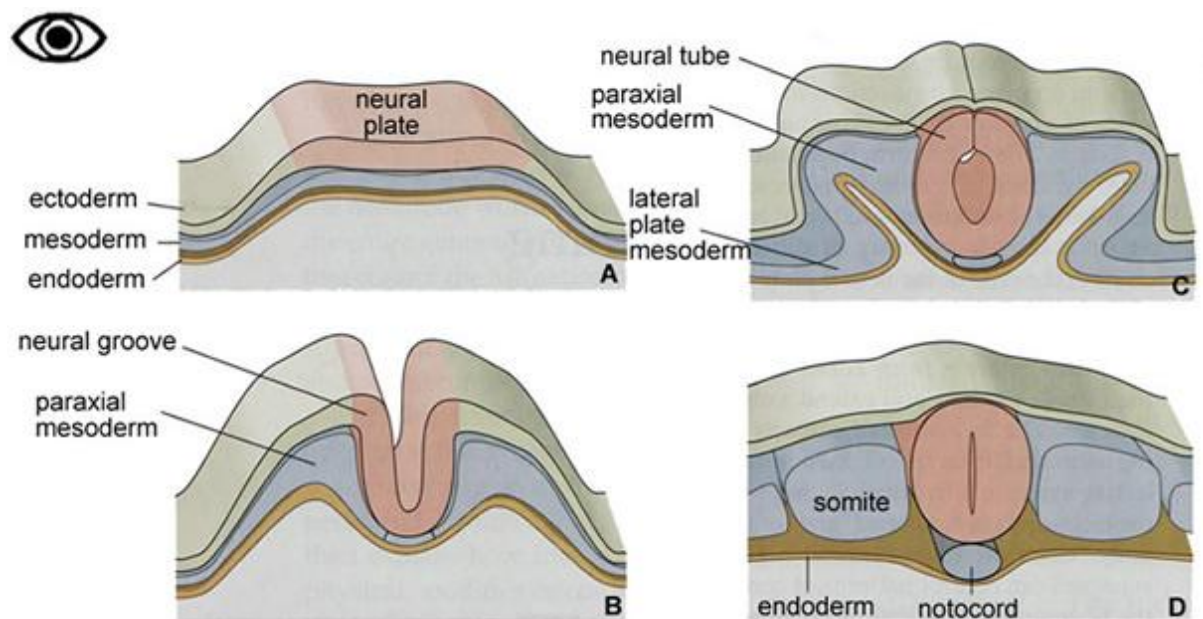
KAAKKAI VALI	AMARAKANDA VALI
Incontinence of urine	Itching in the body
Incontinence of faeces	Body pain
	Scratching with nails

MODERN ASPECTS

7.1.NEURAL EMBRYOLOGY

7.1.A.OVERVIEW OF BRAIN DEVELOPMENT:

The nervous system is derived from the ectoderm, the outermost tissue layer, of the embryo. In the third week of gestation, the neuroectoderm appears and forms the neural plate along the dorsal side of the embryo. This neural plate is the source of the majority of all neurons and glial cells in the mature human. A groove is formed in the neural plate and, by week four of gestation, the neural plate wraps in on itself to make a hollow neural tube. This neural tube later gives rise to the brain and spinal cord, any mutations at this stage may lead to lethal deformities like anencephaly or lifelong disabilities like spina bifida.



7.1.B.DIFFERENTIATION OF NEURAL TISSUE FROM ECTODERM:

During early embryonic development the ectoderm specifically give rise to the epidermis (skin) and the neural plate. The conversion of undifferentiated ectoderm to neuro-ectoderm requires signals from the mesoderm. At the onset of gastrulation, presumptive mesodermal cells move through the dorsal blastopore lip and form a layer in between the endoderm and the ectoderm. These mesodermal

cells that migrate along the dorsal midline give rise to a structure called the notochord. Ectodermal cells overlying the notochord develop into the neural plate in response to a diffusible signal produced by the notochord. The remainder of the ectoderm gives rise to the epidermis (skin). The ability of the mesoderm to convert the overlying ectoderm into neural tissue is called Neural Induction.

7.1.C.FORMATION OF NEURAL TUBE:

The neural plate folds outwards during the third week of gestation to form the neural groove. Beginning in the future neck region, the neural folds of this groove close to create the neural tube. The formation of the neural tube from the ectoderm called Neurulation.

Some cells from the neural folds give rise to pluripotent neural crest cells that migrate widely in the embryo and give rise to many nervous structures:

- Spinal ganglia (dorsal root ganglia)
- Ganglia of the autonomic nervous system
- Ganglia of some cranial nerves
- Sheaths of peripheral nerves
- Meninges of brain and spinal cord
- Pigment cells
- Suprarenal medulla
- Skeletal and muscular components in the head

The ventral part of the neural tube is called the basal plate; the dorsal part is called the alar plate. The hollow interior is called the neural canal. By the end of the fourth week of gestation, the open ends of the neural tube (the neuropores) close off.

7.1.D.DEVELOPMENT OF NEURAL CELLS AND SYNAPSES:

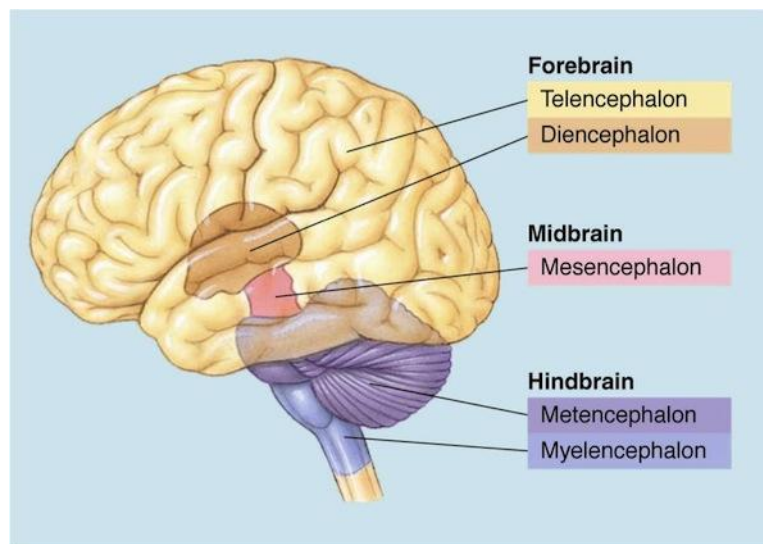
The most anterior part of the neural tube is called the telencephalon, which expands rapidly due to cell proliferation, and eventually gives rise to the brain. Gradually some of the cells stop dividing and differentiate into neurons and glial cells, which are the main cellular components of the brain. The newly generated neurons migrate to different parts of the developing brain to self-organize into different brain structures. Once the neurons have reached their regional positions, they extend axons and dendrites, which allow them to

communicate with other neurons via synapses. Synaptic communication between neurons leads to the establishment of functional neural circuits that mediate sensory and motor processing, and underlie behavior. The brain does most of its development within the first 20 years of life.

7.1.E.REGIONALIZATION:

Late in the fourth week, the rostral portion of the neural tube forms the three primary brain vesicles, or hollow swellings. They are prosencephalon, mesencephalon and rhombencephalon. The caudal portion of the neural tube remains relatively undifferentiated and forms the spinal cord.

7.1.F.DEVELOPMENT OF ADULT BRAIN FORM THE PRIMARY BRAIN VESICLES:



Primary vesicles	Secondary vesicles	Adult structures
Forebrain vesicle (prosencephalon)	Telencephalon	Cerebral hemispheres, consisting of the cortex and medullary center, basal ganglia, lamina terminalis, hippocampus, the corpus striatum, and the olfactory system
	Diencephalon	Thalamus, epithalamus, hypothalamus, subthalamus, neurohypophysis, pineal gland, retina, optic nerve, mamillary

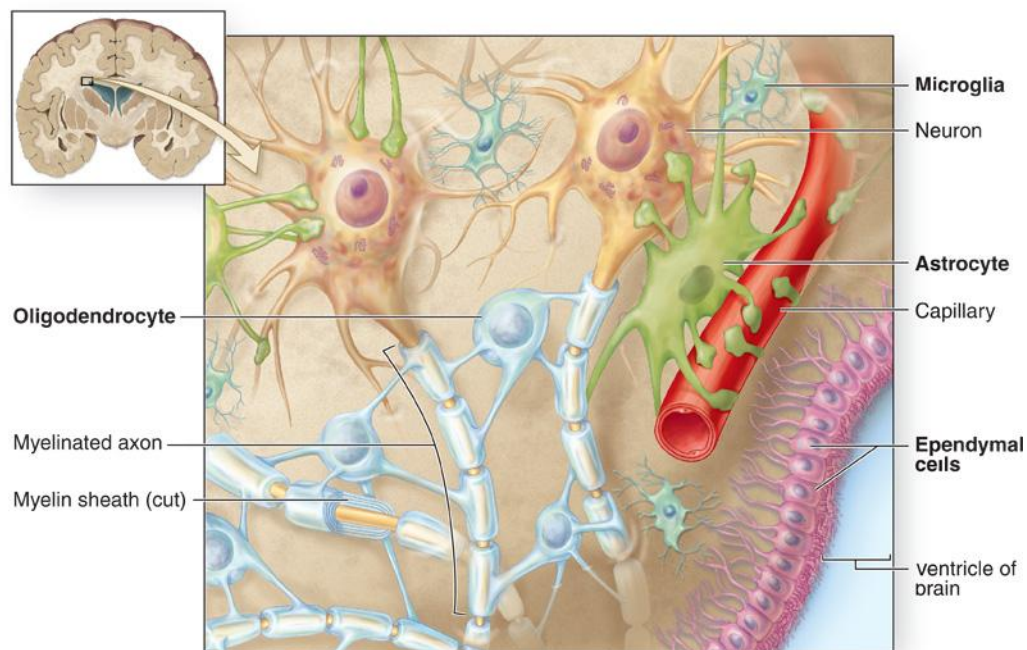
Primary vesicles	Secondary vesicles	Adult structures
	bodies	
Midbrain vesicle (mesencephalon)	Mesencephalon	Midbrain
Hindbrain vesicle (rhombencephalon)	Metencephalon	Pons and cerebellum
	Myelencephalon	Medulla

7.2.INTRODUCTION TO NERVOUS SYSTEM

The Nervous system consists of two main parts: the Central nervous system (CNS) and the Peripheral nervous system (PNS). The CNS corresponds to the portion enclosed within the bony cavities of the Skull and Vertebral Column. The PNS begins at the nerve roots arising from the Central nervous system and a small portion of these nerves lie within the bony confines. The Central Nervous system is divided into the Brain and the Spinal cord. The Brain is further subdivided into two Cerebral hemispheres, Diencephalon, Brainstem and Cerebellar hemispheres.

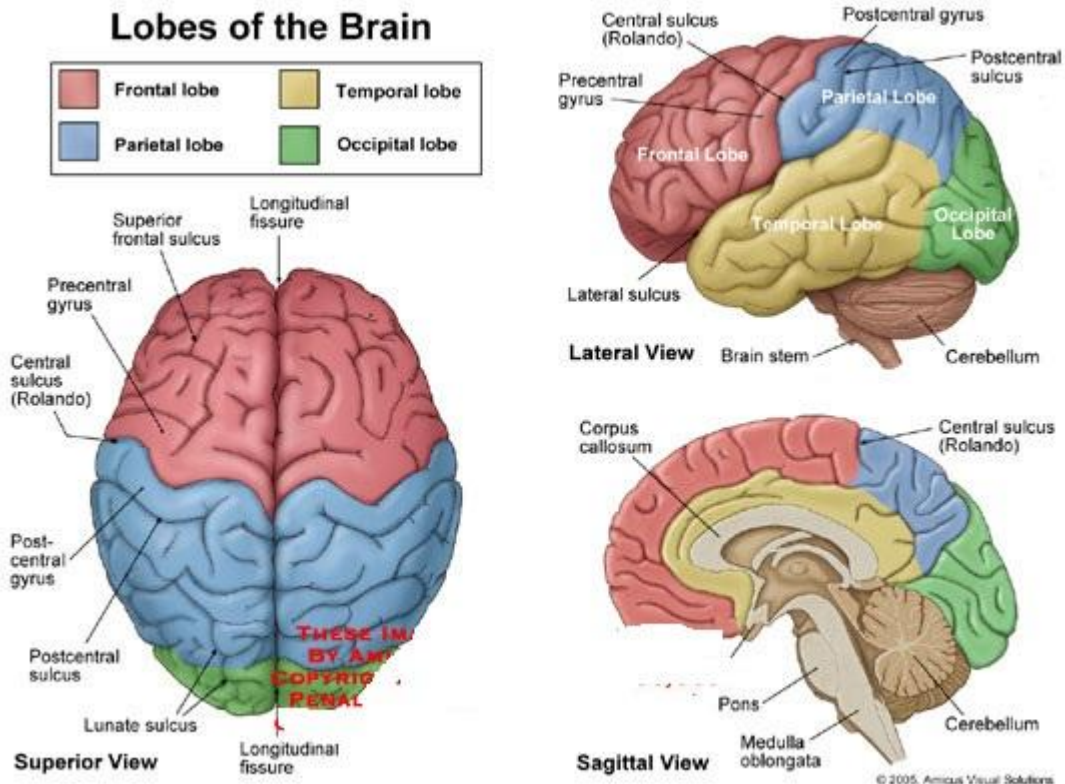
CELLS OF THE NERVOUS SYSTEM

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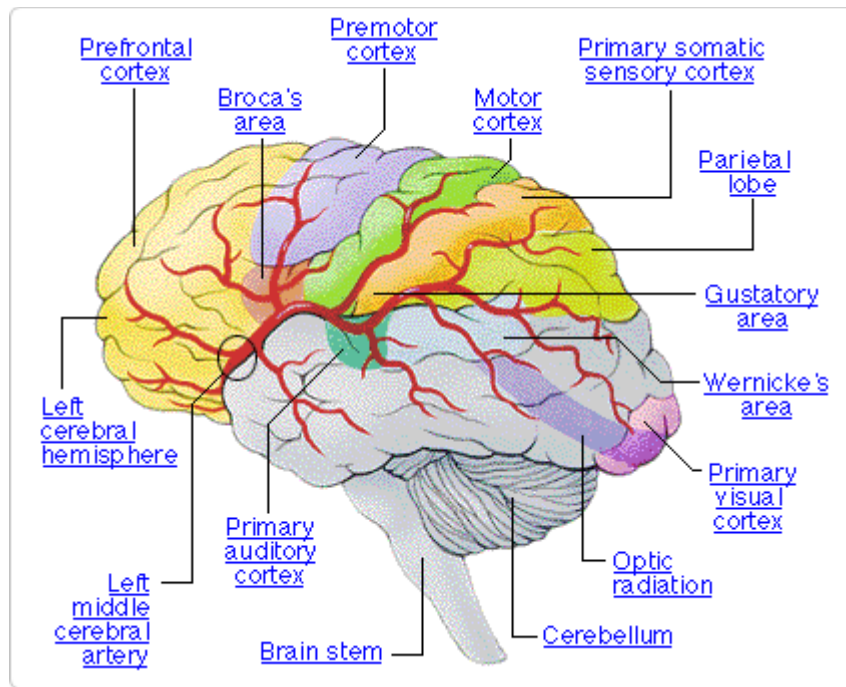
The nervous system includes specialised blood vessels, ependymal cells lining the cerebral ventricles and glial cells, of which there are 3 types. Astrocytes form the structural framework for the neurons and control their biochemical environment. Astrocyte foot processes are closely associated with the blood vessels to form the blood-brain barrier. Oligodendrocytes are responsible for the formation and maintenance of the myelin sheath, which surrounds axons and is essential for the rapid transmission of action potentials by saltatory conduction. Microglia are blood-derived mononuclear macrophages. Peripheral neurons have axons invested in myelin made by Schwann cells.

7.2.A.CEREBRAL HEMISPHERES



The cerebral cortex constitutes the highest level of nervous function, the anterior half dealing with executive ('doing') functions and the posterior half constructing a perception of the environment ('receiving and perceiving'). The neopallium is the top layer of the cerebral hemispheres, about 2 mm thick, and is involved in higher functions such as sensory perception, generation of motor commands, spatial reasoning, and in humans, language and conscious thought. Other names for the neopallium include neocortex, isocortex and homotypical cortex.

The Corpus Callosum is a bundle of nerve fibers (millions of axons from the cerebral cortex) that allows the two hemispheres to communicate. Each cerebral hemisphere has four functionally specialised lobes. Many of the functions are lateralised. To which side depends on which of the two hemispheres is 'dominant', i.e. where language function is represented. In right-handed individuals this is almost always the left hemisphere while in left-handers either hemisphere may be dominant with about equal frequency.



FRONTAL LOBE:

The frontal lobes are concerned with executive function, movement and behaviour. In addition to the primary and supplementary motor cortex, there are specialized areas for the control of eye movements, speech (Broca's area) and micturition control.

PARIETAL LOBES:

The parietal lobes are concerned with the integration of sensory perception. The primary sensory cortex lies in the post-central gyrus of the parietal lobe. Much of the remainder is devoted to 'association' cortex, which integrates the input from the various sensory modalities. The non-dominant parietal lobe houses areas concerned with spatial awareness and orientation.

TEMPORAL LOBE:

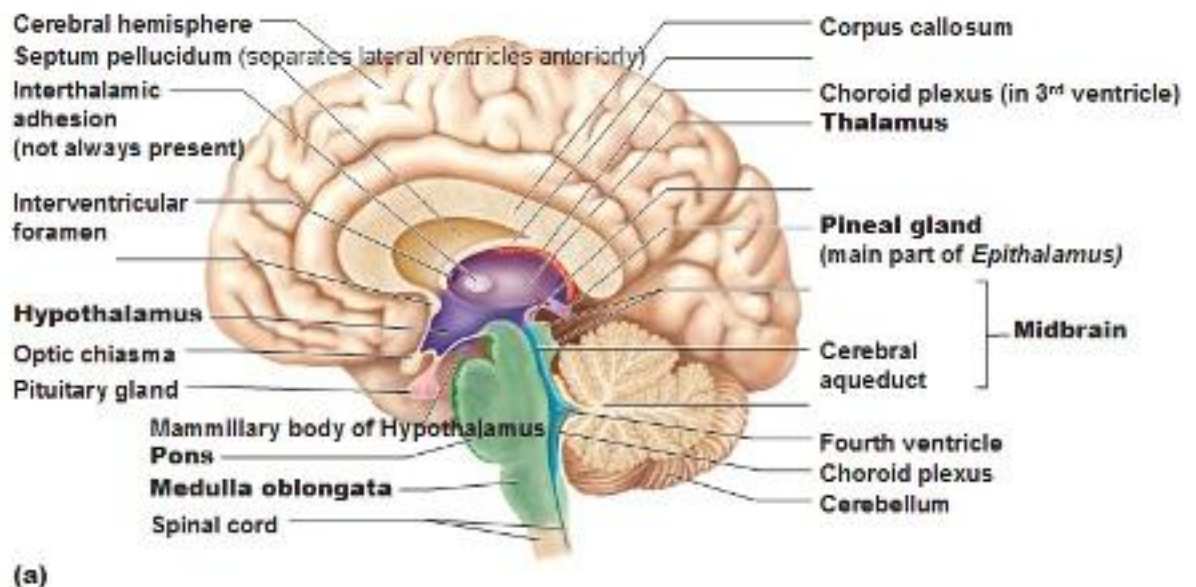
In the temporal lobes are the primary auditory cortex and primary vestibular cortex. On the medial side lie the olfactory cortex and the parahippocampal cortex which is involved in memory function. The temporal lobes also contain many structures associated with the limbic system, including the hippocampus and the amygdala, which are involved in the processing of memory and emotions. The dominant temporal lobe also participates in language functions, particularly verbal comprehension (Wernicke's area).

OCCIPITAL LOBE:

The occipital lobes are principally concerned with visual processing. The contralateral visual hemifield is represented in the primary visual (striate) cortex, and areas immediately surrounding this are involved in the processing of specific visual submodalities such as colour, movement or depth, and the analysis of more complex visual patterns such as faces.

7.2.B.DIENCEPHALON -INNER BRAIN :

The Diencephalon (and Brainstem)



- Thalamus - Involved in sensory perception and regulation of motor functions (i.e., movement). It connects areas of the cerebral cortex that are involved in sensory perception and movement with other parts of the brain and spinal cord that also have a role in sensation and movement
- Hypothalamus and pituitary gland - These control visceral functions, body temperature and behavioral responses such as feeding, drinking, sexual response, aggression and pleasure.
- Posterior lobe of the pituitary - Receives antidiuretic hormone (ADH) and oxytocin from the hypothalamus and releases them into the blood.

BRAIN STEM:

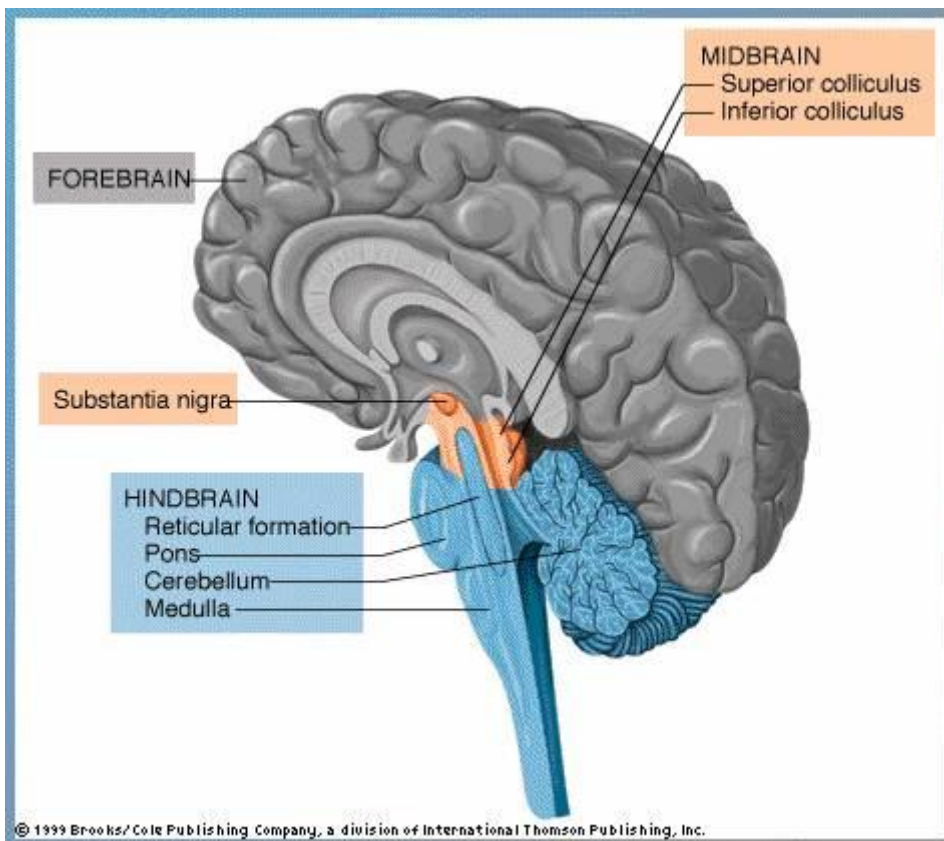
In addition to containing all the sensory and motor pathways entering and leaving the hemispheres, the brain stem houses the nuclei of the cranial nerves, nuclei projecting to the cerebrum and cerebellum as well as other important collections of neurons in the reticular formation. The cranial nerve nuclei provide motor control to muscles of the head (including the face and eyes) and some in the neck, along with coordinating sensory input from the special sense organs and the face, nose, mouth, larynx and pharynx. They also control autonomic functions including pupillary, salivary and lacrimal functions. The reticular formation is predominantly involved in the control of conjugate eye movements, the maintenance of balance, cardiorespiratory control and the maintenance of arousal.

7.2.C.THE MIDBRAIN (MESENCEPHALON):

The midbrain (mesencephalon) occupies only a small region in humans (it is relatively much larger in "lower" vertebrates).

- Tectum - Controls Auditory and Visual Responses.
- Tegmentum - Attention Control Mechanism and awareness. Controls Motor Functions. Regulates Some Autonomic Functions.
- Ventral Tegmental Area (VTA): Packed with dopamine-releasing neurons, which relay messages about pleasure through their nerve fibers to nerve cells in a limbic system structure called the nucleus accumbens. Still other fibers reach to a related part of the frontal region of the cerebral cortex. So, the pleasure circuit, which is known as the mesolimbic dopamine system, spans the survival-oriented brainstem, the emotional limbic system, and the frontal cerebral cortex.
- Isthmus - midbrain-hindbrain junction

7.2.D.THE HINDBRAIN (RHOMBENCEPHALON):



- Pons - Contains many cranial nerves (Nerves such as the facial nerves, which emerge from the brainstem rather than the spinal cord). It contains the Pontine Sleep Center, which is important for the level of consciousness, and the Respiratory Centers, which along with the Medullary Respiratory Centers help to control Respiratory Movements.
- Cerebellum - It is situated in the posterior cranial fossa. It is made up of two hemispheres united by vermis. The cerebellum is located behind the brain stem. The cerebellum integrates information from the vestibular system (region of the inner ear that helps with balance) that indicates position and movement and uses this information to coordinate balance, posture and limb movements. It is supplied by Superior cerebellar artery, Anterior inferior cerebellar artery and Posterior inferior cerebellar artery.
- Medulla Oblongata - Controls autonomic functions (such as breathing, heartbeat, sneeze, cough, swallow, vomiting). Processing of inter-aural time differences for sound localization. The Vagus nerve is the tenth cranial originating from the medulla oblongata.

INTERNAL CAPSULE:

This is a compact layer of white matter within the cerebral hemisphere. It is the downward continuation of “Corona radiata”.

VENTRICLES:

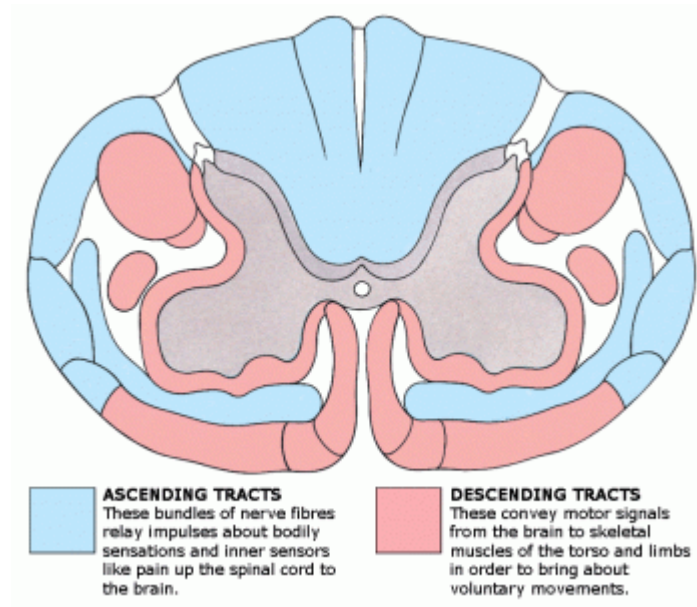
There are two lateral ventricles, III ventricle and IV ventricle.

III ventricle communicates with IV ventricle via, cerebral aqueduct. IV ventricle communicated with sagittal sinus via, arachnoid villi and granulations septum pellicidum separates both lateral ventricles.

SPINAL CORD:

The spinal cord contains not only the afferent and efferent fibres arranged in functionally discrete bundles but also, in the grey matter, collections of cells which are responsible for lower-order motor reflexes and the primary processing of sensory information, including pain.

ASCENDING & DESCENDING TRACTS OF SPINAL CORD



General arrangement of both tracts

1st order neuron

2nd order neuron

3rd order neuron

The only difference is the different locations where each order of neuron ends. Decussation is the cross-over of the tract from one side to the other. Therefore, there are instances where the left side of the body is controlled by the right brain hemisphere. Decussation occurs at different locations for each tracts.

Descending tracts (Motor)

General arrangement of descending tracts

- First order neuron starts at the cerebral cortex in the somatomotor area.
- The axon of the 1st order neuron will synapse with the 2nd order neuron at the level of the brain stem, which commonly decussate (crosses over) to the opposite side.
- The 3rd order neuron is located in the ventral horn of the spinal cord, which will exit with the spinal nerve to supply the muscle.

Types of descending tracts:

- Lateral corticospinal tract
- Anterior corticospinal tract

Therefore, the descending tract is also known as corticospinal tract.

CORTICOSPINAL TRACT:

Corticospinal tract arise from long axons of the pyramidal cells (extrapyramidal layer) of the precentral gyrus (primary motor centre of the cerebral cortex). It lies in front of the central sulcus.

First order neuron

- Fibres of the 1st order neuron arise from the precentral gyrus
- These fibres converge and enter a small area the internal capsule.
 - ▶ The internal capsule is bounded medially by the thalamus and caudate nucleus and laterally by the lenticular nucleus. The Parts of internal capsule include anterior and posterior limbs. The anterior limb contain head & neck fibres most anterior. The posterior limb contain lower limb fibres most posterior. All the fibers (from ascending & descending tracts) converge here.
- Function: separates the caudate nucleus and the thalamus from the lenticular nucleus
- The descending fibres passes through the lateral half of the posterior limb of internal capsule
- After the internal capsule, the fibres enter the brain stem
 - midbrain
 - pons
 - medulla

2) 2nd order neuron

- Fibres of the 1st order neuron ends when it enters the brain stem and synapse with the 2nd order neuron.
 - The fibres pass through the brainstem
 - 1st – through the (mid 5th) crus cerebri of midbrain
 - 2nd – through the anterior part of the pons
 - 3rd – in the medulla oblongata
- 80 % - 85% of the fibres cross to the opposite side this is called Motor decussation.
- Uncrossed fibres enters the spinal cord.

3)3rd order neuron

The second order neuron fibres in the medulla oblongata enters the spinal cord and synapse with the 3rd order neuron

In the spinal tract, the crossed tract descend as the lateral corticospinal tract. Therefore, the motor cortex of the cerebral hemisphere controls the opposite side of the body (L – R, R – L). The uncrossed fibres in the spinal tract, descent as the anterior corticospinal tract.

Ascending tracts (sensory)

Types of ascending tracts:

1. Spinothalamic tracts
 - Lateral for pain & temperature
 - Anterior for light touch & pressure.
2. Dorsal column tract for
 - deep touch & pressure
 - proprioception
 - vibration sensation
3. Spinocerebellar tract for
 - posture & coordination

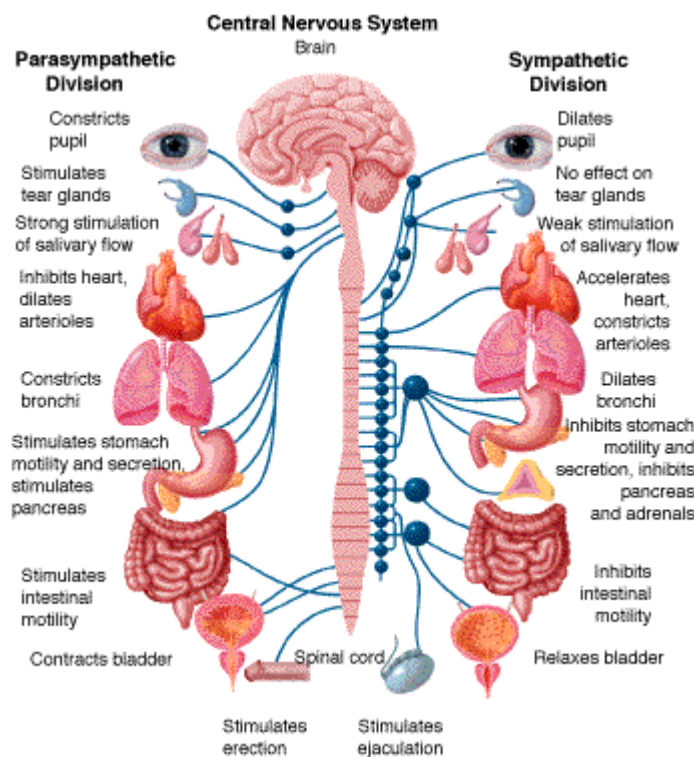
Extrapyramidal tracts of spinal Cord:

It is a part of the motor system that causes involuntary reflexes and movement and modulation of movement . It reach their targets by traveling through the "pyramids" of the medulla.

The extrapyramidal tracts include

- ❖ Medial Longitudinal fasciculus
- ❖ Rubrospinal tract
- ❖ Olivospinal tract
- ❖ Pontine reticulospinal tract
- ❖ Medullary reticulospinal tract
- ❖ Lateral vestibulospinal tract
- ❖ Tectospinal tract
- ❖ Tectulospinal tract
- ❖ Lateral vestibulospinal tract
- ❖ Anterior vestibulospinal tract
- ❖ Lateral vestibulospinal tract

7.3.AUTONOMIC SYSTEM:



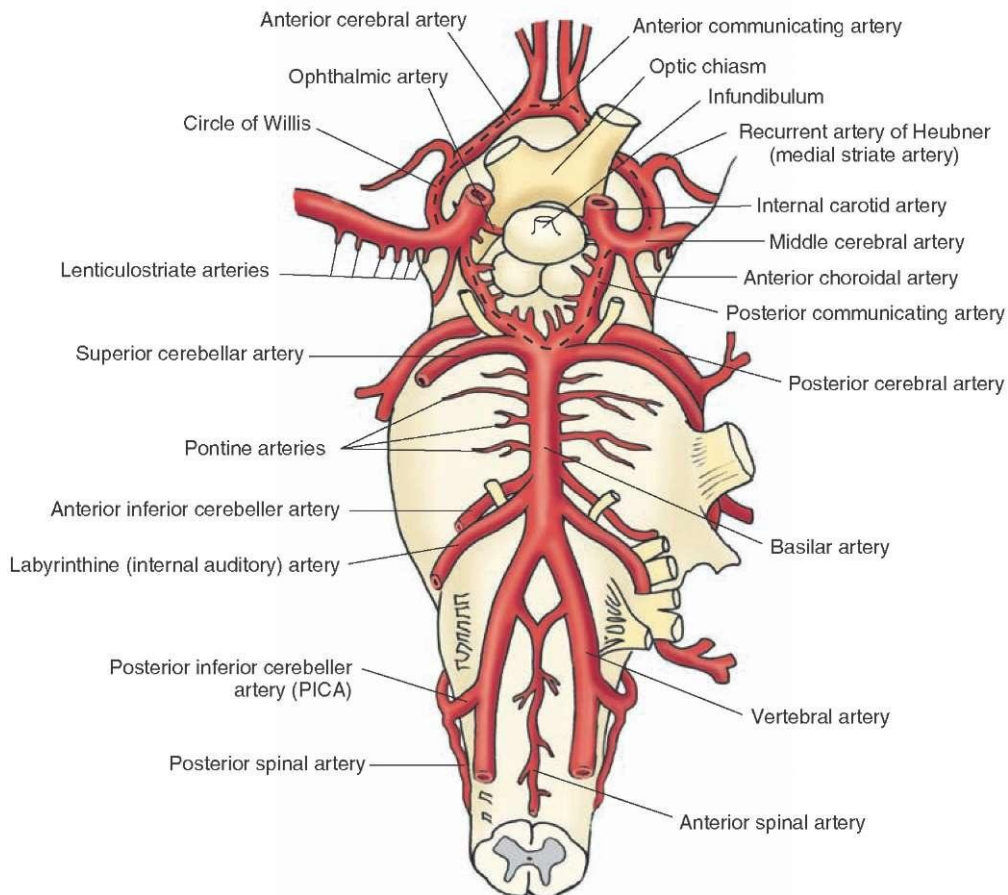
- ❖ The unconscious neural control of the body's physiology is effected through the autonomic system. This innervates the cardiovascular and respiratory systems, smooth muscle of the gastrointestinal tract, and glands throughout the body. The autonomic system is controlled centrally by diffuse modulatory systems in the brain stem, limbic system and frontal lobes, which are concerned with arousal and background behavioural responses to threat.

The output of the autonomic system is divided functionally and pharmacologically into two divisions: the parasympathetic and sympathetic systems.

- ❖ The sensory cell bodies of peripheral nerves are situated in the dorsal root ganglia in the spinal exit foramina, whilst the distal ends of their neurons are invested with various specialised endings for the transduction of external stimuli into nervous impulses.
- ❖ The motor cell bodies are in the anterior horns of the spinal cord. Motor neurons initiate muscle contraction by the release of acetylcholine across the neuromuscular junction which results in change in potential in the muscle end plate. To increase the speed of impulse conduction, peripheral nerve axons are variably invested in myelin sheaths consisting of the wrapped membranes of Schwann cells.
- ❖ Thus, any peripheral nerve is made up of a combination of large, fast, myelinated axons (which carry information about joint position sense and commands to muscles), and smaller, slower, unmyelinated axons (which carry information about pain and temperature)

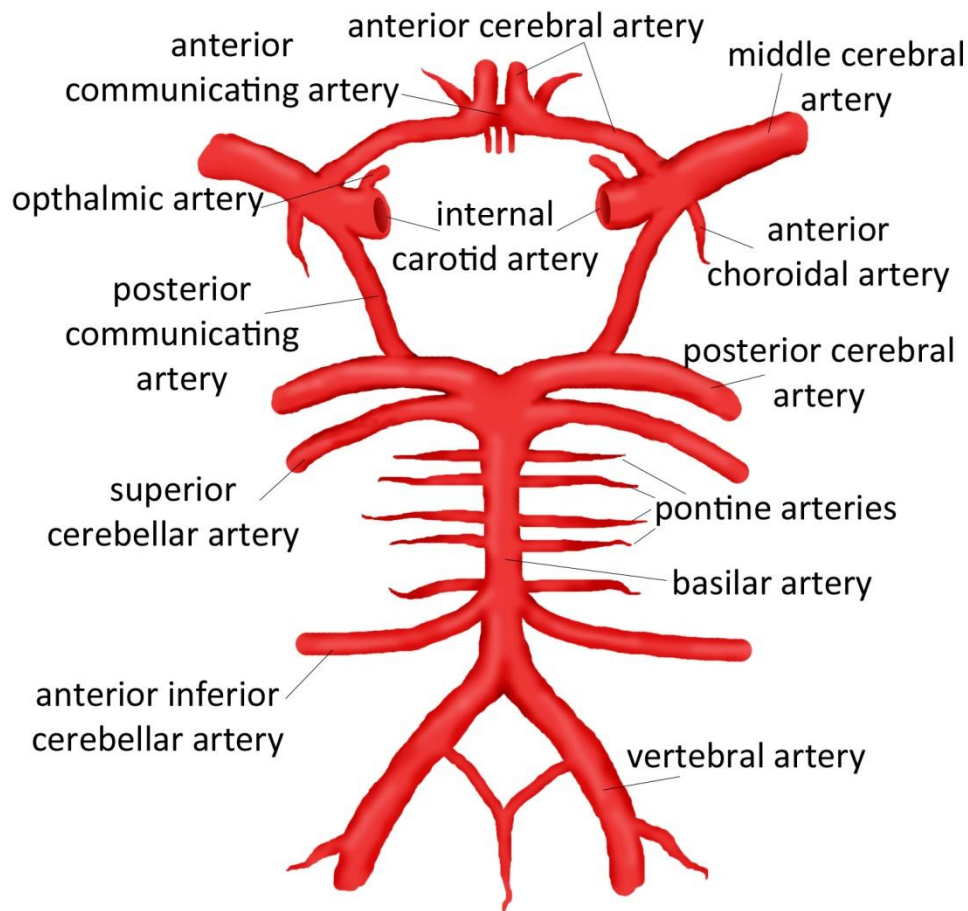
7.4.BLOOD SUPPLY TO THE BRAIN:

Brain receives blood from carotid and vertebral system



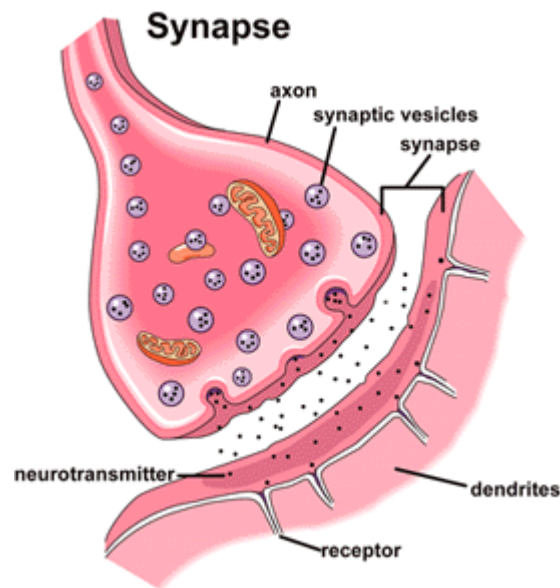
- ❖ Middle Cerebral Artery
- ❖ Internal carotid artery
- ❖ Anterior cerebral artery:
- ❖ Anterior choroidal artery.
- ❖ Vertebral arteries:
- ❖ The posterior inferior cerebellar artery
- ❖ Basilar artery
- ❖ Anterior inferior cerebellar artery:
- ❖ Superior cerebellar artery
- ❖ Posterior cerebral artery
- ❖ Posterior choroidal artery:

CIRCLE OF WILLIS



The circle of Willis is formed when the **internal carotid artery (ICA)** enters the cranial cavity bilaterally and divides into the **anterior cerebral artery (ACA)** and **middle cerebral artery (MCA)**. The anterior cerebral arteries are then united by an **anterior communicating (ACOM) artery**. These connections form the anterior half (anterior circulation) of the circle of Willis. Posteriorly, the basilar artery, formed by the left and right vertebral arteries, branches into a left and right **posterior cerebral artery (PCA)**, forming the posterior circulation. The PCAs complete the circle of Willis by joining the internal carotid system anteriorly via the posterior communicating (PCOM) arteries.

7.5.SYNAPSE:



- ❖ A synapse is a junction between a neuron and another cell. It is separated by a synaptic cleft. In most synapses, the axon terminal of the presynaptic cell contains numerous synaptic vesicles with neurotransmitter stored within them.
- ❖ The action potential causes calcium channels to open in the plasma membrane of the presynaptic cell. The calcium ions (Ca^{++}) diffuse into the neuron and activate enzymes, which in turn, promote fusion of the neurotransmitter vesicles with the plasma membrane. This process releases neurotransmitter into the synaptic cleft.
- ❖ Neurotransmitter molecules diffuse across the cleft and stimulate the postsynaptic cell, causing Na^+ channels to open and depolarization of the postsynaptic cell. The depolarization of the postsynaptic cell is referred to as a *synaptic potential*.
- ❖ The magnitude of a synaptic potential depends on the amount of neurotransmitter at the electrical state of the postsynaptic cell. If it is already partially depolarized, an action potential can be produced with less stimulation by neurotransmitters. If it is hyperpolarized, it will require more stimulation than normal to produce an action potential.
- ❖ After the neurotransmitter is released into the synaptic cleft, it must be quickly removed or inactivated to prevent the postsynaptic cell from being continuously stimulated and to allow another synaptic potential. In some cases there may be enzymes present in the synaptic cleft that break down the neurotransmitter immediately. For example, acetyl cholinesterase breaks down the neurotransmitter

acetylcholine. In other cases, the axon terminal may reabsorb neurotransmitter and repack it into vesicles for reuse.

Functional classification of synapse:

In the basis of transmission of impulses, the synapse is classified into two types. They are

Electrical synapse

Chemical synapse

Electrical synapse:

In the electrical synapse, there is continuity between the presynaptic and the post synaptic neurons. So there is direct exchange of ions between the two neurons. The electrical synapse is found not only in the nervous system but also between some non-nervous cells like the cardiac muscle fibres, smooth muscle fibres of intestine and the epithelial cells of lens of eye.

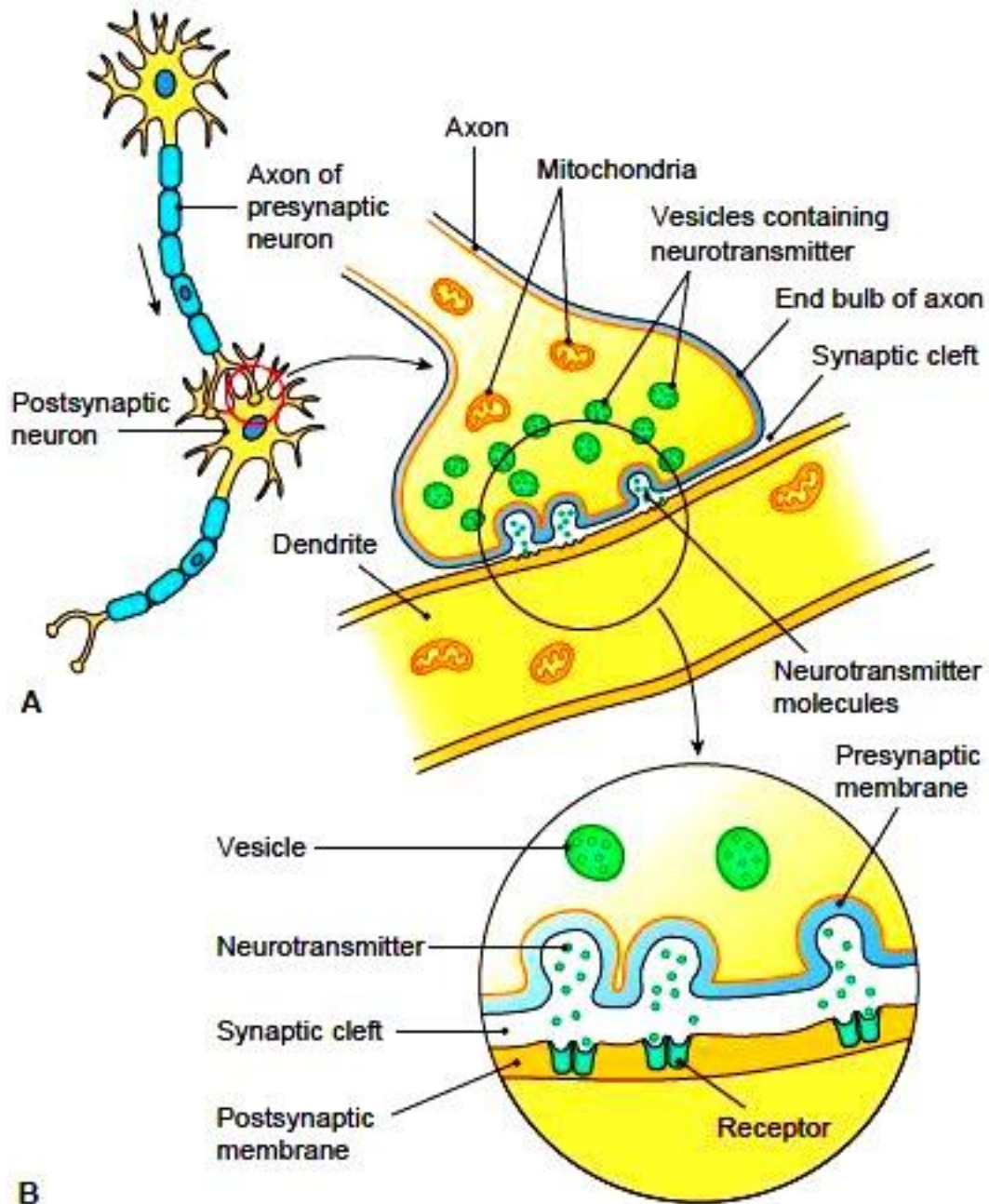
Chemical synapse:

Chemical synapse is the function between a nerve fibre and a muscle fibre or between two nerve fibres, through which the signals are transmitted by the release of chemical transmitter.

Functions of Synapse:

- The main function of the synapse is to transmit the impulses, i.e., action potential from one neuron to another. Thus, the synapses are of two types.
- Excitatory synapse, which transmits the impulses – excitatory function and.
- Inhibitory synapses, which inhibit the transmission of impulses inhibitory function.

7.5.A.THE GENERATION AND TRANSMISSION OF THE NERVOUS IMPULSE



The functioning of the nervous system rests upon two physiological processes:

- i) the generation of an action potential with its conduction down axons,
- ii) the synaptic transmission of impulses between neurons and/or muscle cells.

These processes depend upon the energy-demanding maintenance of an electrochemical gradient across neuron cell membranes, and alterations in this are effected by specialised ion channels in the membrane. Synaptic transmission involves the release from a neuron of neurotransmitter molecules that bind to specific receptors on the membrane of the receptor cell.

These molecules alter either that cell's membrane potential via effects upon ion channel permeability, or its metabolic function. There are over 20 different neurotransmitters known to act at different sites in the nervous system, all potentially amenable to pharmacological manipulation.

The neuronal cell bodies are acted upon by synapses with large numbers of other neurons. Each neuron therefore acts as a microprocessor, reacting to the influences upon it by changes to its cell membrane potential, causing it to be more or less ready to discharge an impulse down its axon(s).

The synapsing neuron terminals are also subject to regulation by receptor sites on their pre-synaptic membrane, which modify the release of transmitter across the synaptic cleft. The effect of some neurotransmitters is to produce long-term modulation of metabolic function or gene expression rather than simply to change the membrane potential. This effect probably underlies more complex processes in cognition, such as long-term memory.

Synaptic terminal - Neurotransmitters are manufactured in the cell body but released from synaptic terminals. The neurotransmitters stimulate other neurons.

MYELINATION:

Some neuroglia function to provide insulation for axons or dendrites. They do so by wrapping around the long fibers.

The insulation properties come from *myelin* contained within the cells.

The layer of insulation is referred to as a myelin sheath.

If these insulating cells are located in the peripheral nervous system, they are called *Schwann cells*.

NEURO TRANSMITTERS:

The main neurotransmitters of the peripheral nervous system are acetylcholine and noradrenaline. However, there are several other neurotransmitters as well, jointly labeled Non-noradrenergic, non-cholinergic (NANC) transmitters.

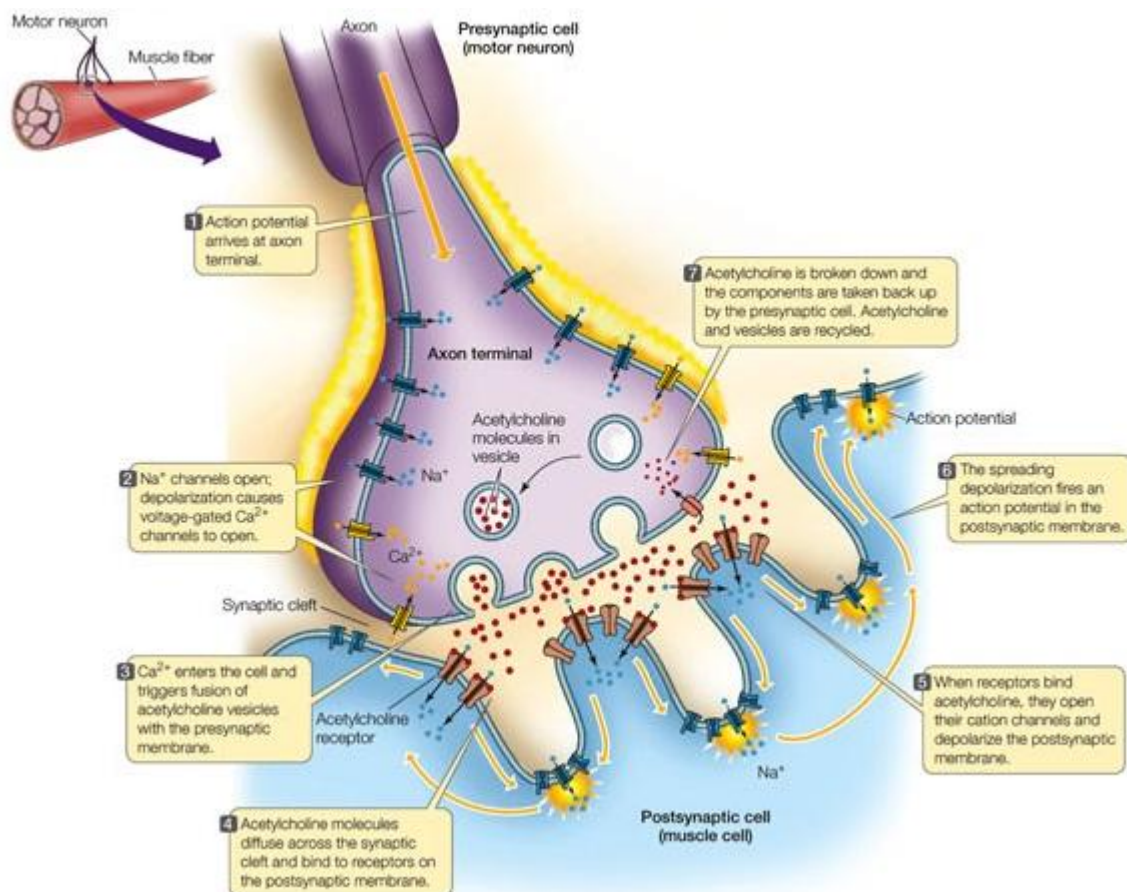
Examples of such transmitters include

NON PEPTIDES - ATP, GABA, dopamine, NO

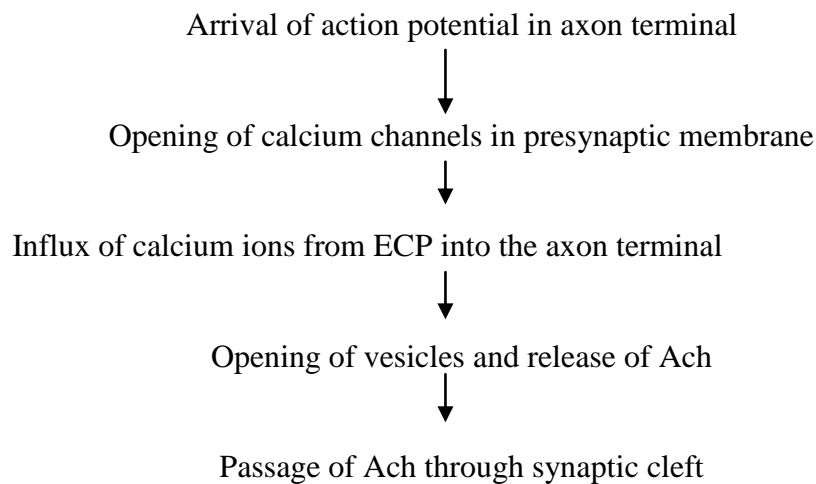
PEPTIDES - Neuropeptide Y, VIP, GnRH, Substance P and CGRP.

A cell that receives a synaptic signal may be excited, inhibited, or otherwise modulated. Sensory neurons are activated by physical stimuli impinging on them, and send signals that inform the central nervous system of the state of the body and the external environment. Motor neurons situated either in the central nervous system or in peripheral ganglia, connect the nervous system to muscles or other effector organs. Central neurons, which in vertebrates greatly outnumber the other types, make all of their input and output connections with other neurons. The interactions of all these types of neurons form neural circuits that generate an organism's perception of the world and determine its behavior.

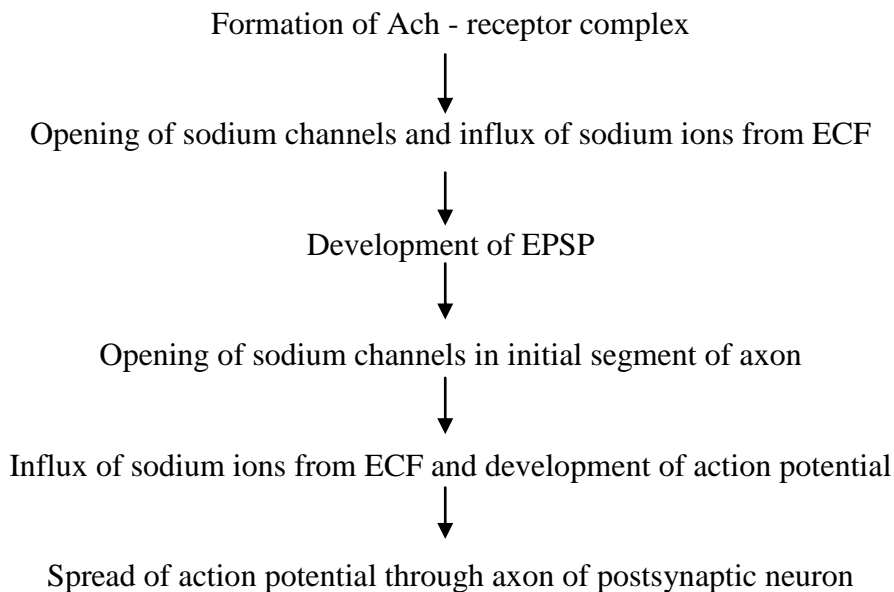
7.5.B.SEQUENCE OF EVENTS DURING SYNAPTIC TRANSMISSION



Presynaptic neuron



Post synaptic neuron



Ach = Acetylcholine. ECF = Extracellular fluid. EPSP = Excitatory postsynaptic potential.

Excitatory function:

When the action potential reaches the presynaptic axon terminal, the voltage gated calcium channels at the presynaptic membrane are opened. Now the calcium ions enter the axon terminal from extracellular fluid.

The calcium ions cause the fusion of synaptic vesicles with cell membrane and release of neurotransmitter substance from the vesicles by means of exocytosis.

Inhibitory function:

Inhibition of synaptic transmission is classified into three types.

Post synaptic inhibition

Presynaptic Inhibition and Renshaw cell inhibition.

Post synaptic inhibition:

This occurs due to the release of an inhibitory neurotransmitter from presynaptic terminal instead of excitatory neurotransmitter substance.

The most important inhibitory neurotransmitter is gamma amino butyric acid (GABA).

Action of GABA – IPSP:

The inhibitory neurotransmitter substance acts on post synaptic membrane by binding with receptor. The transmitter receptor complex opens the ligand gated potassium channels instead of opening the sodium channels. Now, the potassium ions pass out of the synapse into extracellular fluid. Chloride channels also open followed by influx of chloride ions inside, the exit of potassium ions and influx of chloride ions causes more negativity inside, leading to hyperpolarization. This is called inhibitory postsynaptic potential (IPSP).

Properties of synapse:

One way conduction

The synaptic delay

Fatigue

Summation and

Electrical property.

Fatigue:

During continuous muscular activity, the synapse forms the seat of fatigue along with the Betz cells present in the motor area of the frontal lobe of the cerebral cortex. The fatigue at the synapse is due to the depletion of neurotransmitter substance, acetylcholine. After producing the action, this neurotransmitter is destroyed by acetylcholinesterase.

Reflex Activity:

Response to a peripheral nervous stimulation that occurs without our consciousness is known as reflex activity.

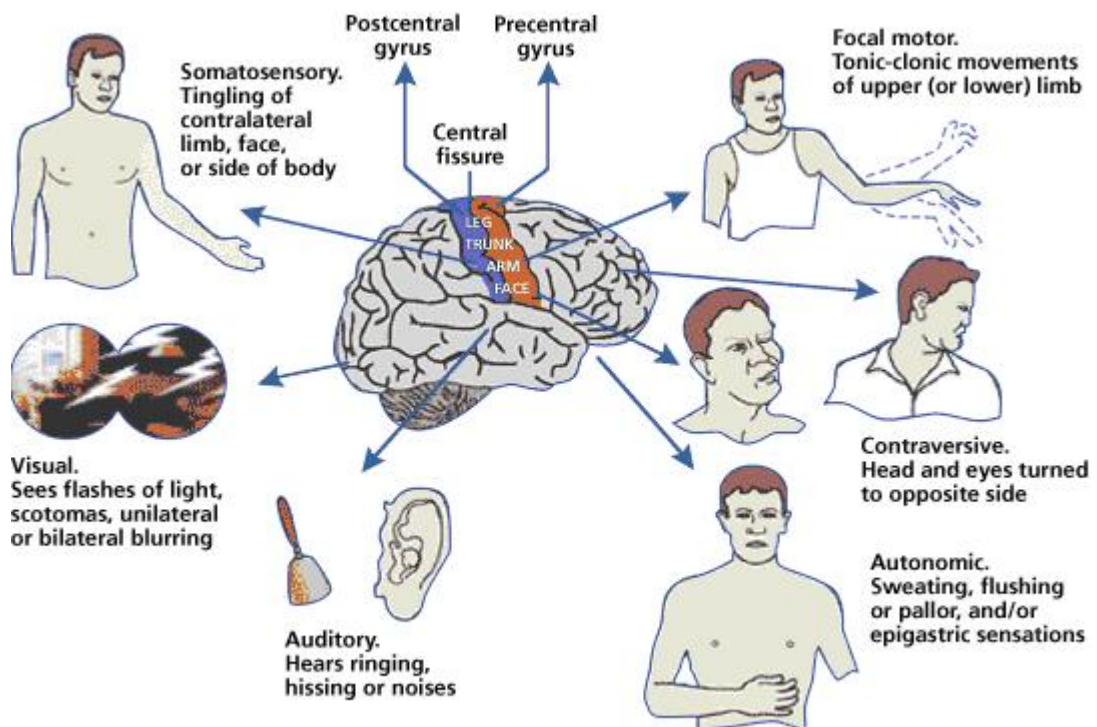
7.6. TONIC – CLONIC SEIZURES

(Grandmal Epilepsy)

7.6.A.Seizures

Definition:

A *seizure* (from the Latin *sacire*, "to take possession of") is a paroxysmal event due to abnormal, excessive, hypersynchronous discharges from an aggregate of central nervous system (CNS) neurons.



Anatomical site	Physiology (EEG)
<ul style="list-style-type: none"> • Cortex • Temporal • Frontal • Parietal • Occipital • Generalised (diencephalon) • Multifocal 	<ul style="list-style-type: none"> • Focal spikes/sharp waves • Generalised spike and wave

7.6.B.CAUSES OF SEIZURES:

Neonates (<1 month)

- Perinatal hypoxia and ischemia
- Intracranial hemorrhage and trauma
- Acute CNS infection
- Metabolic disturbances (hypoglycemia, hypocalcemia, hypomagnesemia, pyridoxine deficiency)
- Drug withdrawal
- Developmental disorders
- Genetic disorders

Infants and children (>1 mo and <12 years)

- Febrile seizures
- Genetic disorders (metabolic, degenerative, primary epilepsy syndromes)
- CNS infection
- Developmental disorders
- Trauma
- Idiopathic

Adolescents (12–18 years)

- Trauma
- Genetic disorders
- Infection
- Brain tumor
- Illicit drug use
- Idiopathic

Young adults (18–35 years)

- Trauma
- Alcohol withdrawal
- Illicit drug use
- Brain tumor
- Idiopathic

Older adults (>35 years)

- Cerebrovascular disease
- Brain tumor
- Alcohol withdrawal
- Metabolic disorders (uremia, hepatic failure, electrolyte abnormalities, hypoglycemia)
- Alzheimer's disease and other degenerative CNS diseases
- Idiopathic

7.6.C.CLASSIFICATION OF SEIZURES

1. Partial seizures

- a. Simple partial seizures (with motor, sensory, autonomic, or psychic signs)
- b. Complex partial seizures
- c. Partial seizures with secondary generalization

2. Primarily generalized seizures

- a. Absence (petitmal)
- b. Tonic-clonic (Grandmal)
- c. Tonic
- d. Atonic
- e. Myoclonic

3. Unclassified seizures

- a. Neonatal seizures
- b. Infantile spasms

7.6.D.TONIC – CLONIC SEIZURES:

❖ This is also called grandmal epilepsy.

The seizure attack occurs in different stages sequentially.

The stages may be sub-divided into the

1. Prodromal phase,
2. Tonic,
3. Clonic and
4. Postictal phase.

PRODROMAL PHASE:

- ❖ Starts several hours before fits.
- ❖ It consists of subjective phenomenon like depressed or apathetic mood ,irritability, vague abdominal cramps which is easily recognized by the patients.
- ❖ Sometimes the patient gets the attack without any forewarning.

© TONIC PHASE:(10-30 seconds)



- ❖ It consists of rolling up of the eyes associated with stiffening of the limbs
- ❖ Clenching of the jaws
- ❖ Often resulting in injury to the tongue.
- ❖ Epileptic cry – since entire musculature goes in to spasm forcing air through the closed vocal cord.

© CLONIC PHASE:(1-2 minutes)



- ❖ It is characterized by alternate flexion-extension movements of all the four limbs convulsions).
- ❖ Strenuous breathing, sweating
- ❖ Frothing of the mouth and excessive salivation.
- ❖ Urine and feces may be voided.
- ❖ Followed by comatose state(5 minutes)

◎POST ICTAL STATE:

In this state the patient does not remember anything that had happened.

Pupils begin to react and the patient then resumes speech, but still remains confused.

Patient starts sleeping for several hours, often wakes up with severe headache and at times vomiting.

7.6.E.PATHOGENESIS:

Pathological cause:

- Genetic
- Developmental
- Tumours
- Trauma
- Vascular
- Infections
- Inflammation
- Metabolic
- Drugs, alcohol and toxins
- Degenerative

Pathology consists of

- 1.Cell death
- 2.Axonal sprouting
- 3.Reorganisation of neural networks
- 4.Alteration in the release of neuro transmitters.

- ❖ The cortical neurons become abnormally excitable due to differentiation.
- ❖ The cytoplasm and cell membrane of such cells have increased permeability rendering them susceptible to activation by hyperthermia, hypoxia, hypoglycemia and hyponatremia.

- ❖ Transition from normal to epileptic form behaviour of the brain caused by greater spread and neuronal recruitment secondary to a combination of enhanced connectivity, enhanced excitatory transmission, failure of inhibitory mechanism and changes in intrinsic neuronal properties.
- ❖ Generalised epilepsies are due to electrical activity occurring throughout the cerebral cortex, because of lowering of seizure threshold. Often, this is genetically determined.
- ❖ This electrical discharge spreads to the ipsilateral and contralateral hemisphere across intra and interhemispheric pathways and also to the subcortical structures like basal ganglia and brain stem reticular nuclei, from where the excitatory activity is fed back to the rest of the cortex.
- ❖ Deficiency of the inhibitory neurotransmitter, (gamma – amino butyric acid (GABA) and disturbance of local regulation of extracellular K^+ , Na^+ , Ca^{2+} or Mg^{2+})
 - This leads to Membrane instability which leads to abnormal electrical discharge.

7.6.F. CLINICAL FEATURES:

- Convulsion – Alternate flexion – extension movements of the four limbs:
- Tonic contractions of muscles throughout the body.
- Upward deviation of eyes
- Incontinence of motion and urine
- Loss of consciousness
- Excessive salivation
- Sweating

7.6.G.COMPLICATIONS:

- Risk of hypoxia and acidosis for mother and foetus is high.
- Coma
- Aspiration Pneumonia
- Cardiac arrhythmia
- Reflex pulmonary oedema
- Neuropsychological dysfunction
- Myoglobinuria and
- Sudden death .

7.6.H. INVESTIGATIONS:

Routine Investigation -Blood , Urine, Stool and certain serum tests help to route out the diseases like diabetes, high blood pressure, renal and liver disorders.

OTHER INVESTIGATIONS:

- EEG
- Computerised tomography
- MRI Scan
- PET Scan (Positron Emission Tomography)
- SPECT (Single Photon Emission Tomography)
- Neuro Imaging- provides views of brain areas involved in seizure activity.
- Electrolyte disturbances
- Neuro Imaging- provides views of brain areas involved in seizure activity.
- Electrolyte disturbances
- Mapping cerebral blood flow
- To study regional glucose metabolism of the brain
- Binding of certain GABA receptors and opiate receptors.

MANAGEMENT OF EPILEPSY

PRIMARY MEASURES:

- 1.Treatment of acute convulsions.
- 2.Prophylactic management

SECONDARY MEASURES:

- 1.Removal of precipitating factors.
- 2.Anti epileptic medications.
- 3.Social rehabilitations.

FIRST AID FOR AN EPILEPSY PATIENT

- The patient is put on soft bed to avoid injuries.
- Tight clothing is loosened and the airway is protected.
- Foreign bodies in the mouth should be removed and a suitable mouth gag is applied in the position of molar teeth .
- The patient should be kept with head low, to avoid aspiration.

COLOUR THERAPY:

- ORANGE - joy and constructivity - animates like red, although different cures are effected by this ray. Included are inflammation of the kidneys, gallstones, prolapses, menstrual cramps, **EPILEPSY**, wet cough and all sinus conditions.

MATERIALS AND METHODS

8.1 STUDY TYPE

Observational study

8.2. STUDY DESIGN

An analytical open label, single centric study.

8.3. STUDY PLACE

Department of Noi naadal,
Ayothidoss Pandithar Hospital,
National Institute of Siddha,
Tambaram Sanatorium, Chennai-47.

8.4 STUDY PERIOD

- Total period - 1yr
- Recruitment for the study - upto 10 months
- Data entry analysis - 1 month
- Report preparation and submission - 1 month

GANNT CHART: (Study Period - 1 year)

ACTIVITIES (Scaled in Months)	1-10 th	11 th	12th
Recruitment for the study			
Data entry & Analysis			
Report preparation& Submission			

8.5 SAMPLE SIZE

Total -	30
Patients -	20
Healthy volunteers -	10

8.6.INCLUSION CRITERIA :

- 1.Age 18-55yrs both sex
2. Complaints of periodic Episodes of Seizures
- 3.Epileptic aura
4. Dryness of the tongue.
5. Hypertonicity of the limbs.
6. History of Confused state.
- 7.. History of Faecal incontinence
8. History of Urinary incontinence

Patients who fulfill any of the four criteria are included to the study.

EXCLUSION CRITERIA

- 1.Systemic illness
2. History of Head injury
- 3.Eclampsia
- 4.Endocrinal diseases
- 5..Vulnerable group

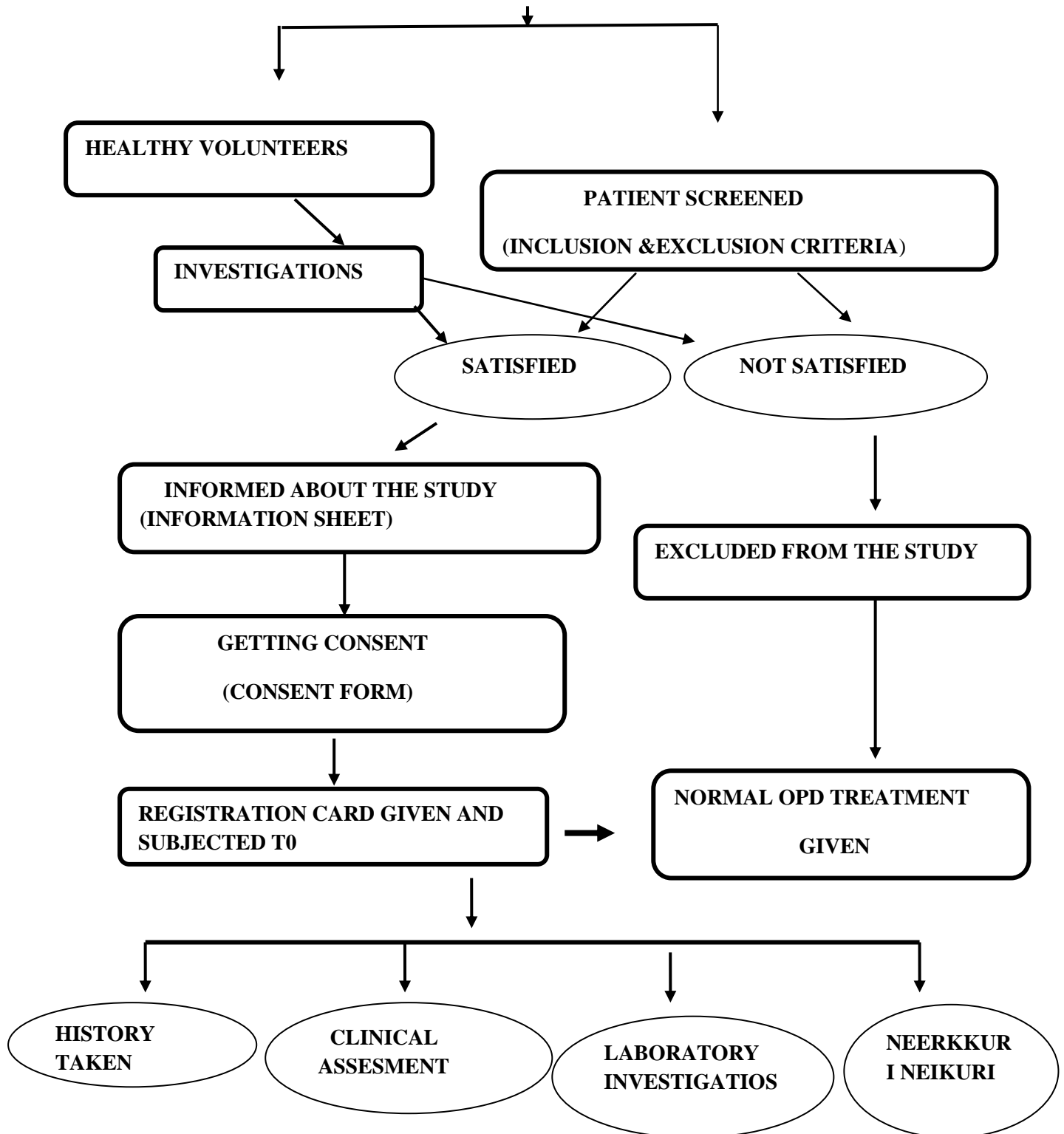
8.7. STUDY ENROLLMENT

- In the study, patients reporting at the OPD & IPD of Ayothidoss Pandithar Siddha Hospital with the clinical symptoms of “peeniam” will be referred to the Research group. Those patients will be screened using the screening proforma (Form-I) and examined clinically for enrolling in the study based on the inclusion and exclusion criteria. Based on the inclusion criteria the patients will be included first and excluded from the study on the same day if they hit the exclusion criteria.
- The patients who are to be enrolled would be informed (Form IV-A) about the study, and the objectives of the study in the language and terms understandable for them.
- After ascertaining the patients’ willingness, a written informed consent would be obtained from them in the consent form (Form IV).

- All these patients will be given unique registration card in which patients' Registration number of the study, Address, Phone number and Doctors phone number etc. will be given, so as to report to research group easily if any complication arises.
- Complete clinical history, complaints and duration, examination findings all would be recorded in the prescribed proformae in the history and clinical assessment forms separately. Screening Form- I will be filled up; Form I-A, Form –II and Form –III will be used for recording the patients' history, clinical examination of symptoms and signs and lab investigations respectively
- Forty healthy volunteers from both the sexes will be selected for control group.

8.8. STUDY METHODOLOGY

METHODOLOGY



8.9. DATA COLLECTION FORMS:

- Required information will be collected from each patient by using following forms.

Form –I Screening and selection Proforma

Form –IA History Proforma on enrollment

Form II Clinical Assessment on enrollment

Form –III Laboratory investigations on enrollment,
during the study

Form –IV Consent form (Vernacular and English versions)

Form -IV- A Patient Information Sheet (Vernacular and English versions)

8.10. DATA MANAGEMENT

- After enrolling the patient in the study, a separate file for each patient will be opened and all forms will be filed in the file. Study No. and Patient No. will be entered on the top of file for easy identification and arranged in a separate rack at the concerned OPD unit. Whenever study patient visits OPD during the study period, the respective patient file will be taken and necessary recordings will be made at the assessment form or other suitable form.
- The screening forms will be filed separately.
- The Data recordings will be monitored for completion and adverse event by HOD and any missed data found out during the study, will be collected from the patient, but the time related data will not be recorded retrospectively
- All collected data will be entered using MS access / excel software onto computer.
- Investigators will be trained to enter the patient data and cross checked by Senior Research Officer and HOD.

8.11. STATISTICAL ANALYSIS:

All collected data will be entered into computer using MS access / MS excel software by the investigator. The data will be analysed using STATA software under the guidance of SRO (stat), NIS. The level of significance will be 0.05. Descriptive analysis will be made and necessary tables/graphs generated to understand the profile of the patients included in the study. Then statistical analysis for significance of different diagnostic characteristics will be done. Student 't' test and 'chi-square' test are proposed to be performed for quantitative and qualitative data.

8.12.INVESTIGATIONS DURING THE STUDY:

The patients will be subjected to basic laboratory parameters during the study.

8.13. TREATMENT DURING THE STUDY:

Normal treatment procedure followed in Department of Noi Naadal,NIS will be prescribed to the study patients and the treatment will be provided at free of cost.

8.14. OUT COME OF STUDY

- Establishing the diagnostic characteristics of Kakkai vali through
 - (1). Eight fold examination
 - (2). Manikkadainool & Astrology
 - (3). Yakkai elakkanam
- Analysis of Agathiyar's symptomatology and categorizing the results with present day modern classification of diseases which may reinforce and augment the understanding and diagnosis of diseases and its management mentioned in Siddha literature.

8.15.. ETHICAL ISSUES:

1. Patients will be examined and screened unbiasedly and will be subjected to the criteria .

2. Informed consent will be obtained from the patient in writing, explaining in the understandable language to the patient.

3. The data collected from the patient will be kept confidentially. The patient will be explained about the diagnosis.

4.To prevent any infection, while collecting blood sample from the patient, only disposable syringes, disposable gloves, with proper sterilization of lab equipments will be used.

5. This study involves only the necessary investigations (mentioned in the protocol) and No other investigation would be done.

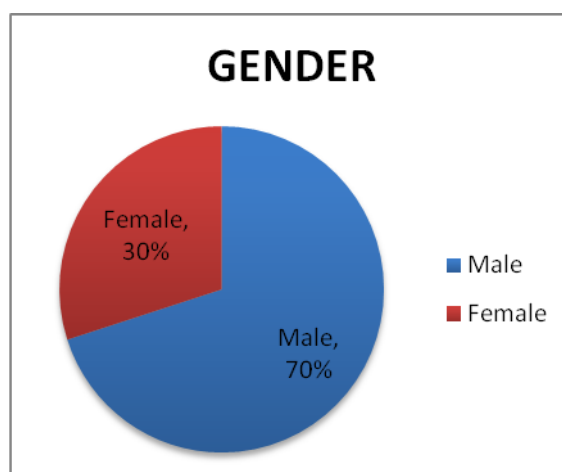
6. Normal treatment procedure followed in NIS will be prescribed to the study patients and the treatment will be provided at free of cost.

7. There will be no infringement on the rights of patient.

RESULTS & OBSERVATIONS

TABLE.9. 1 GENDER DISTRIBUTION

	No. of cases	Percentage
Male	14	70%
Female	6	30%
Total	20	100%



OBSERVATION:

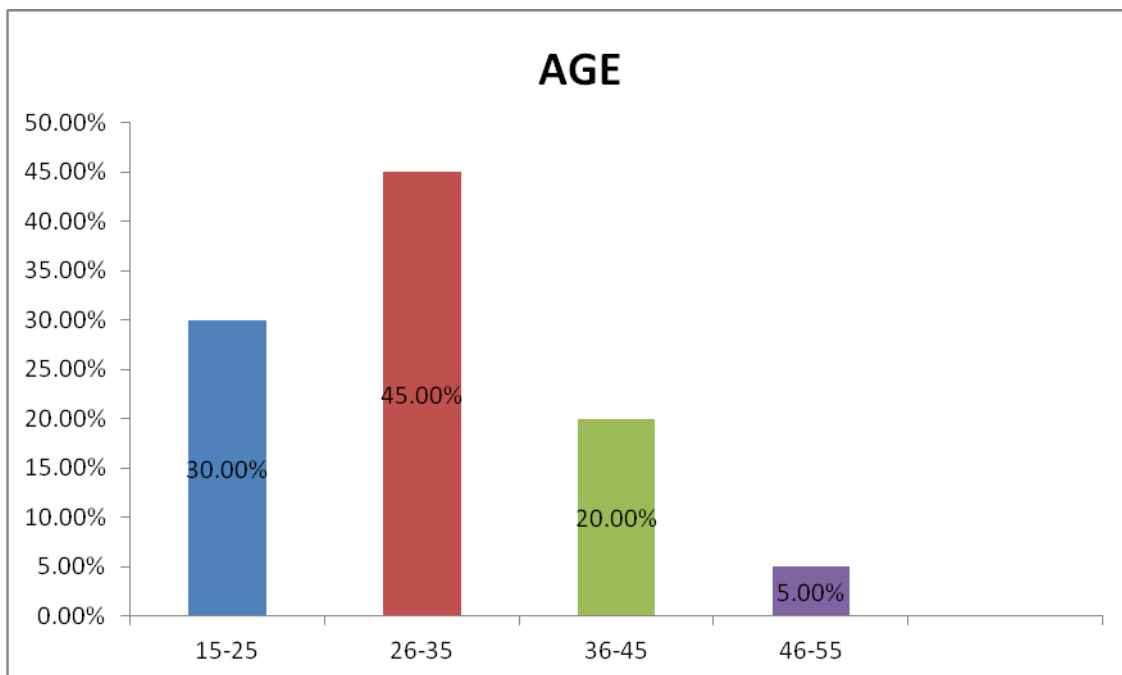
Table no 9.1 shows that the prevalence of the disease was found to be higher in males i.e. 70% than in females 30%.

INFERENCE:

No specific inference could be made.

TABLE.9.2 AGE DISTRIBUTION

Age yrs	No. of cases	Percentage
15– 25 yrs	6	30%
26 – 35yrs	9	45%
36- 45 yrs	4	20%
46- 55yrs	1	5%
Total	20	100%



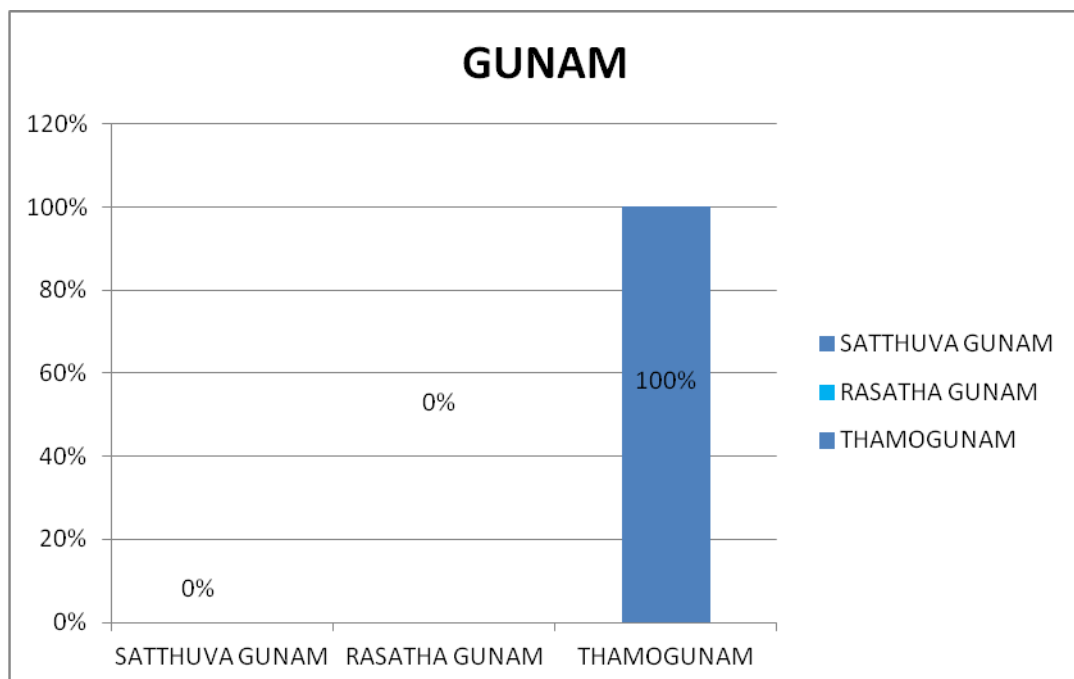
OBSERVATION: Table no.9.2 shows that the prevalence of the disease was found to be higher in the age group 26-35 years (37.50%) and next one is 15-25 years (22.50%) age group and next one is 36-45years(20.00%)

INFERENCE:

Majority of cases (37.50%) in the study were 26-35 years. The common cause of Kaakkai vali is caused due to vitiated Vatha humour which initiates Kaba and Pitta humour. As per in the Siddha text, the Vatha humour (below 33 yrs) was affected.

TABLE.9. 3 GUNAM DISTRIBUTIONS

Gunam	No. of cases	Percentage
Sathuva gunam	0	0
Rasatha gunam	0	0
Thamo gunam	20	100%
Total	20	100%



OBSERVATION:

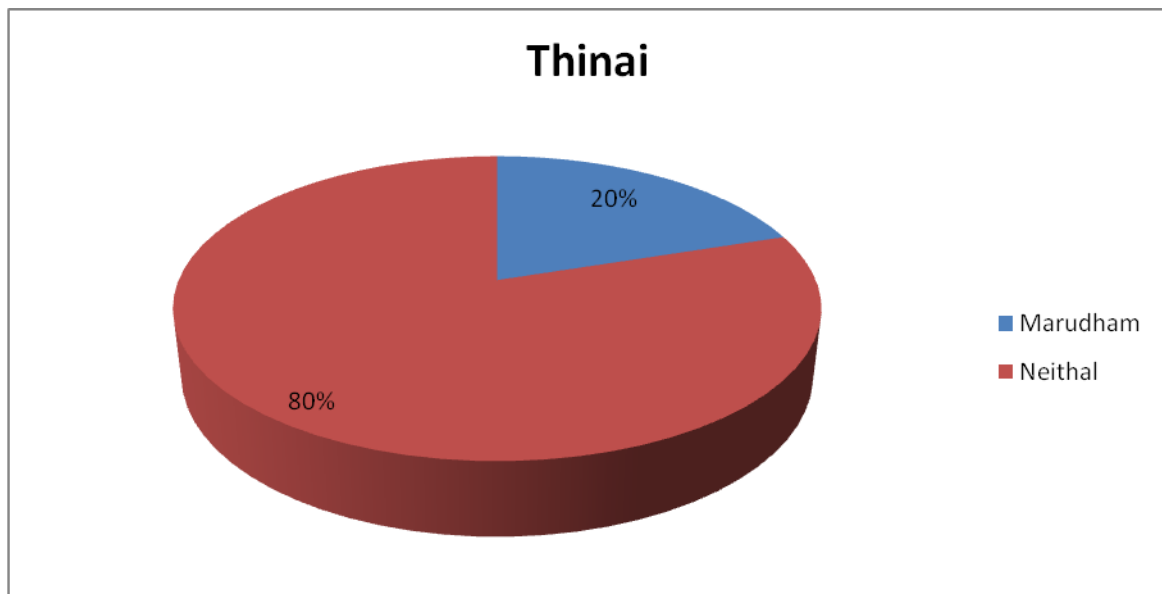
Table no 9.3 shows that all the 20 cases, (100%) were found to possess Thamo gunam.

INFERENCE:

No specific inference could be made.

9. 4 THINAI DISTRIBUTIONS

Thinai	No. of cases	Percentage
Kurinji	0	0
Mullai	0	0
Marutham	4	20%
Neithal	16	80%
Paalai	0	0
Total	40	100%



OBSERVATION:

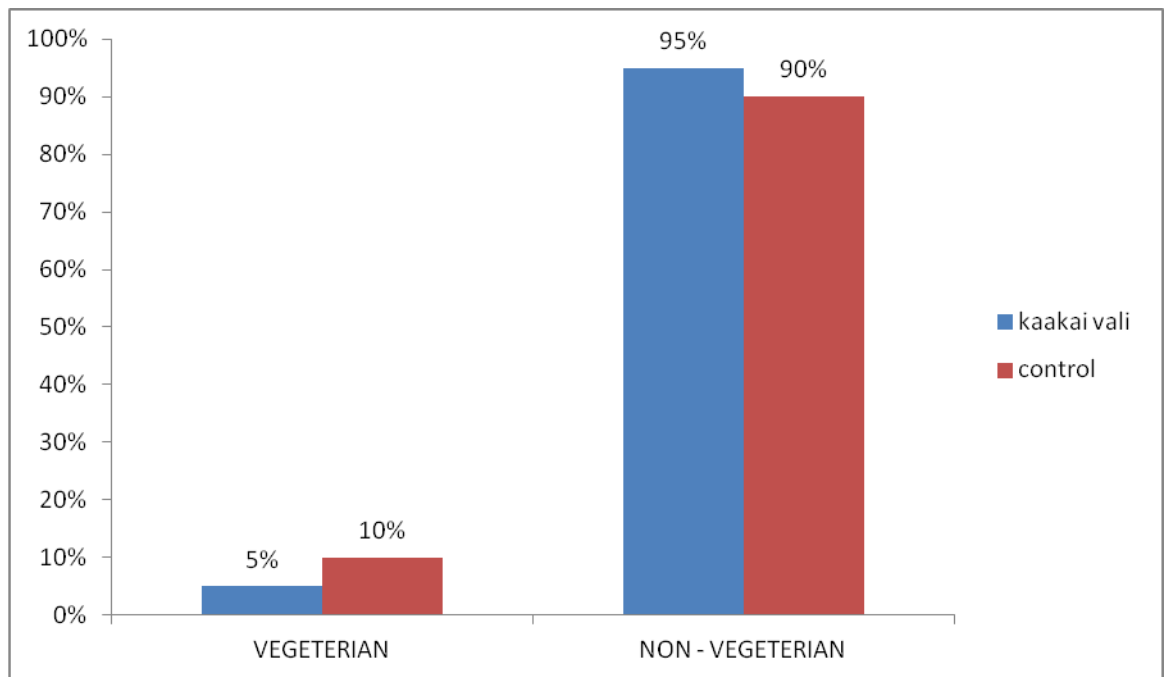
Table no.4 shows that most of the cases (80%) were reported from Neithal nilam, the remaining 20% of cases were reported from Marutha Nilam.

INFERENCE:

Most of the cases were from Neithal region. The study center(National Institute of Siddha) is in Neithal nilam, observations can be ascertained only after a multi centric study.

TABLE.9.5 FOOD HABITS

Food habits	Patients		Healthy volunteers	
	No.of Cases.	percentage	No.of Cases	percentage
Vegetarian	2	5%	1	10%
Non-Vegetarian	18	95%	9	90%
Total	20	100%	10	100%



OBSERVATION

Out of 20 cases, 5% of cases were vegetarian and 95% of cases were non-vegetarian.

OBSERVATION IN CONTROL GROUPS:

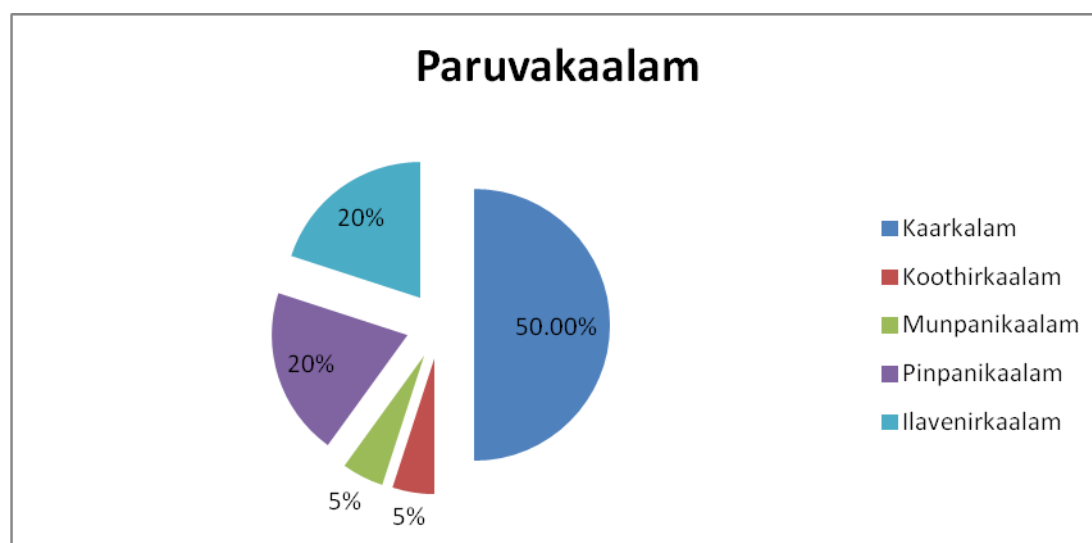
Out of 10 cases, 10% of cases were vegetarian and 90% of cases were non-vegetarian.

INFERENCE

The general population status is reflected in the study population and no specific inference could be made with respect to the study.

TABLE 9.6 PARUVA KAALAM (SEASON) DISTRIBUTIONS

Paruvakaalam	No of cases	Percentage
Kaarkaalam	10	50%
Koothirkaalam	1	5%
Munpanikaalam	1	5%
Pinpanikaalam	4	20%
Ilavenil kaalam	4	20%
Total	20	100%



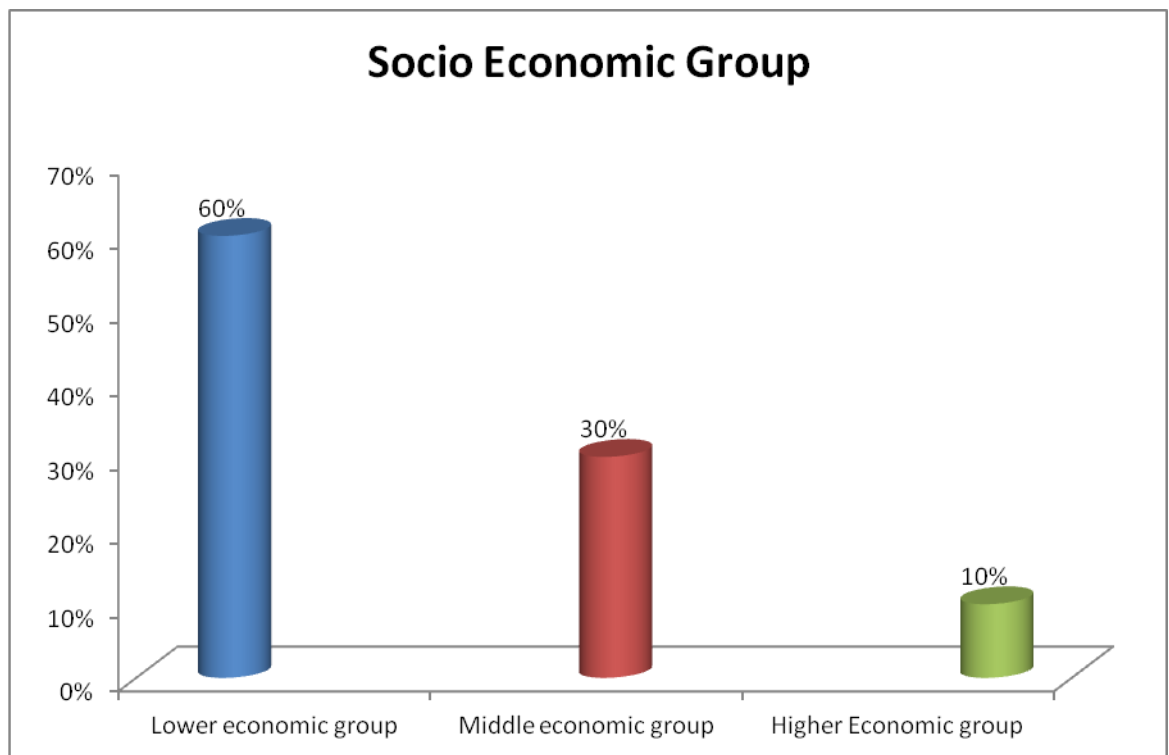
OBSERVATION: Table no. 9.6. shows that among the 20 patients, 10 cases (50%) were in kaar kaalam, 1 cases (5%) were in koothir kaalam & munpani kaalam. 4 cases (20%) were admitted in Pinpanikaalam, 4 cases (20%) were in Ilavenil kaalam.

INFERENCE:

Most of the cases were affected in Kaarkaalam region. As per the text, monsoon and cold items act as triggering factors for the initiation of Valipu noi.

TABLE.9.7 SOCIO ECONOMIC STATUS DISTRIBUTION

Socio economic status	No. of cases	Percentage
Lower economic groups	12	60%
Medium economic groups	6	30%
High economic groups	2	10%
Total	20	100%



OBSERVATION:

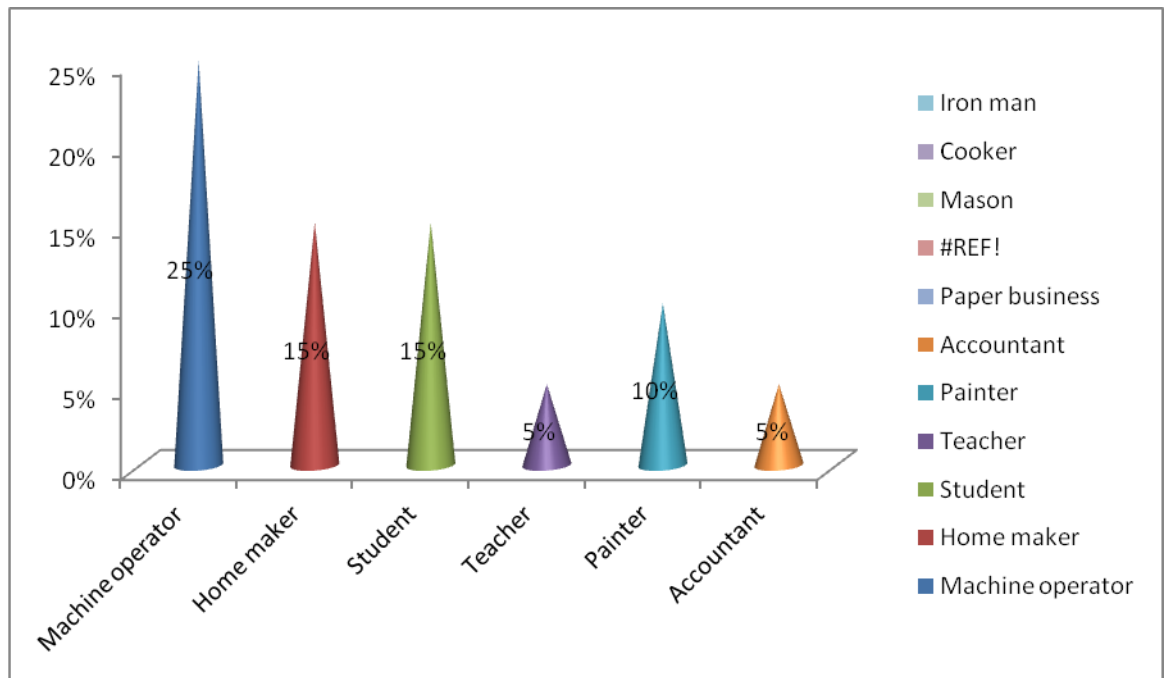
Table no.9.7 shows that the incidence of the disease was found to be higher in Lower economic groups 80%

INFERENCE:

No specific inference could be made .

TABLE.9.8 DISTRIBUTION BY OCCUPATION

OCCUPATION	PATIENTS	
	No.of cases	PERVENTAGE
Mechanic operator	6	30%
Home maker	3	15%
Student	3	15%
Teacher	1	5%
Painter	2	10%
Accountant	1	5%
Paper business	1	5%
Mason	1	5%
Cooker	1	5%
Iron man	1	5%
Total	20	100%



OBSERVATION

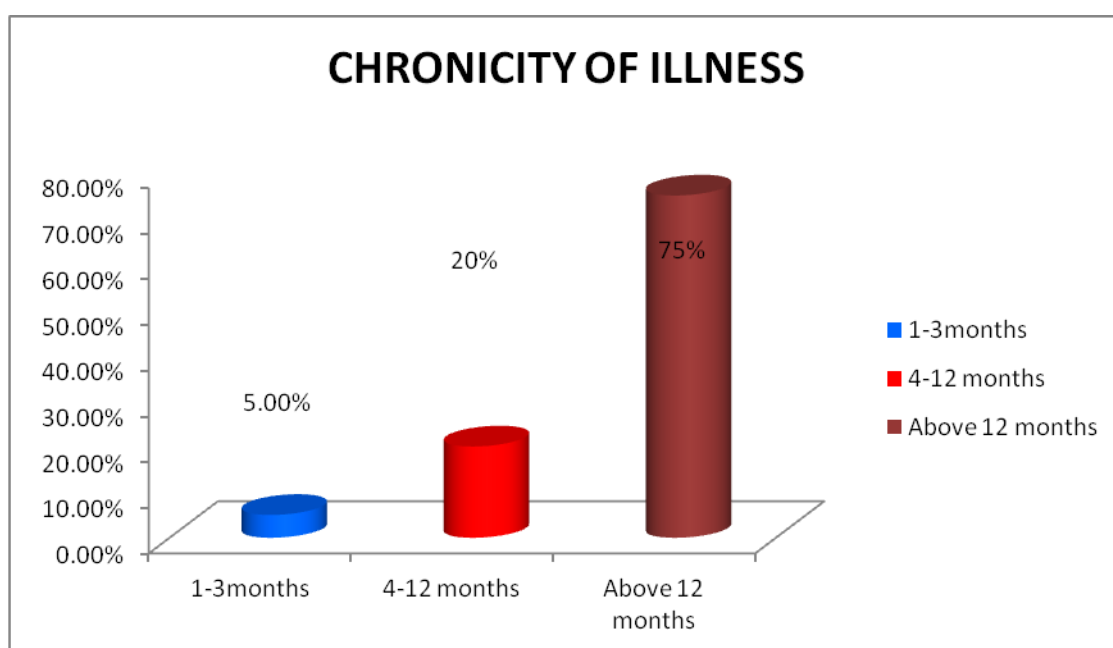
Among 20 cases, 35% of cases are Machine operators, 15% cases are Home makers 15% are Students , 10% are painters,5% are Teachers,Paper business,Accountant,Cooker,Iron-man and Mason.

INFERENCE:

Majority of them are machine operators who work for more than 10 hours, have more stress related problems, this is reflected in the study.Next Home makers and students are more affected who also have more tension nowadays.

TABLE. 9.9 DURATION OF ILLNESS

Chronicity of Illness	No.of cases	Percentage
1-3 months	1	5%
4-12 months	4	20%
Above 12 months	15	75%
Total	20	100



OBSERVATION:

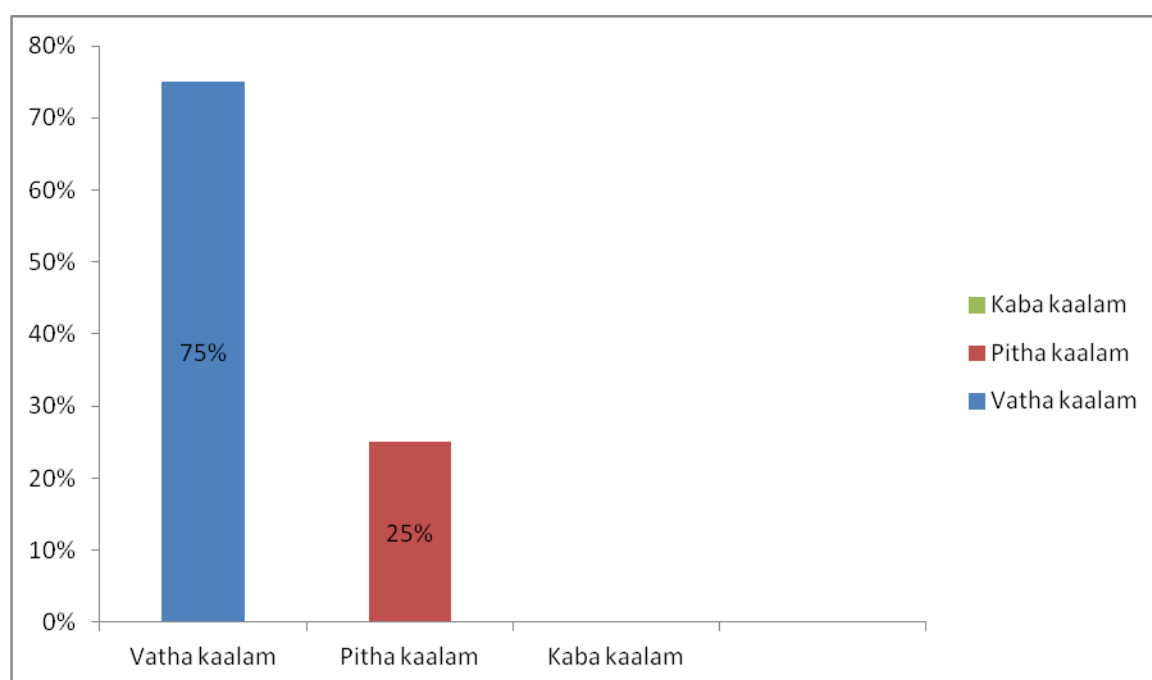
Table no.19 shows that 75% of the cases were affected in the duration of more than 12 months.

INFERENCE:

No specific inference could be made .

TABLE.9.10.KAALAM DISTRIBUTION

AGE	PATIENTS	
	No.of cases	Percentage
Vatha kaalam	15	75%
Pitha kaalam	5	25%
Kaba kaalam	0	0
Total	20	100%

**OBSERVATION**

Among 20 cases,

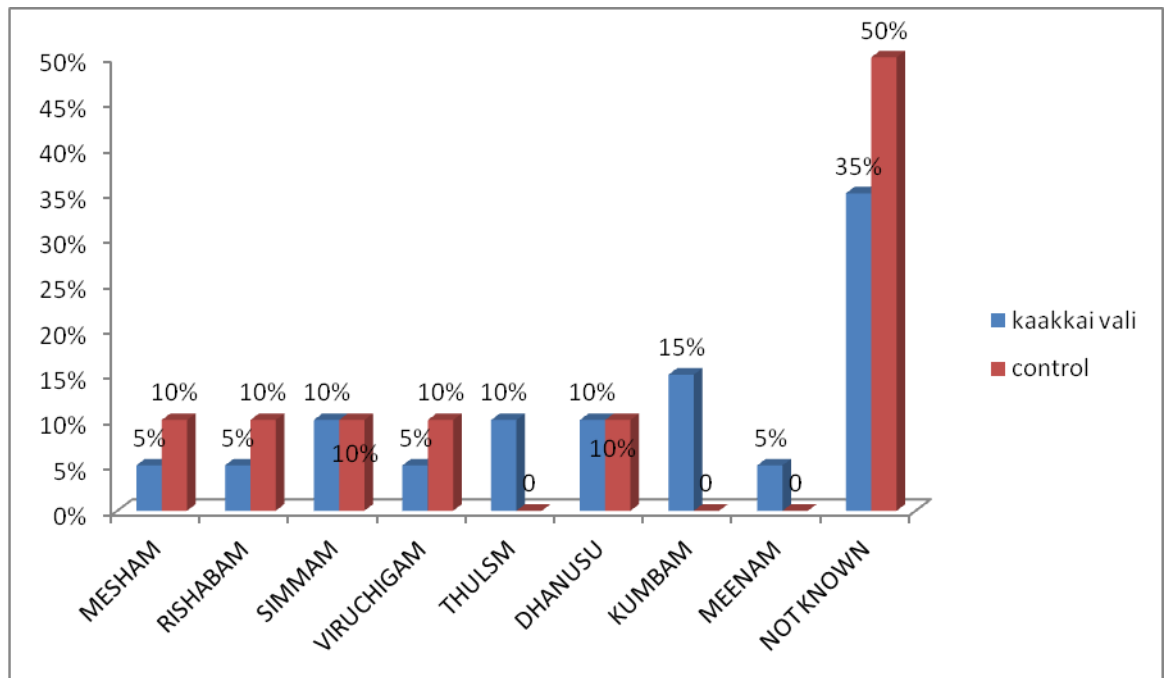
- 75% of cases came under Vatha kaalam ie., 0-33yrs,
- 25% of cases fall under Pitha kaalam(34-66yrs).

INFERENCE

In the study majority of the patients fell in Vatha kaalam. As most of the patients are in Vatha kaalam, this is because around the age group 30 yrs people are socially active so they are more prone to get exposed to exterior environment, this is reflected the study. As per the Siddha Text, VAlI noi is caused due to vitiated vatha humour which is reflected in the study.

TABLE.9.11.RASI (ZODIAC SIGN) DISTRIBUTION

RASI	PATIENTS		CONTROL	
	No.of cases	Percentage	No.of cases	Percentage
Mesham	1	5%	1	10%
Rishabam	1	5%	1	10%
Simmam	2	10%	1	10%
Viruchigam	1	5%	1	10%
Thulam	2	10%	0	0
Dhanusu	2	10%	1	10%
Kumbam	3	15%	0	0
Meenam	1	5%	0	0
Not known	7	35%	5	50%
Total	20	100%	10	100%



OBSERVATION IN KAAKKAI VALI PATIENTS:

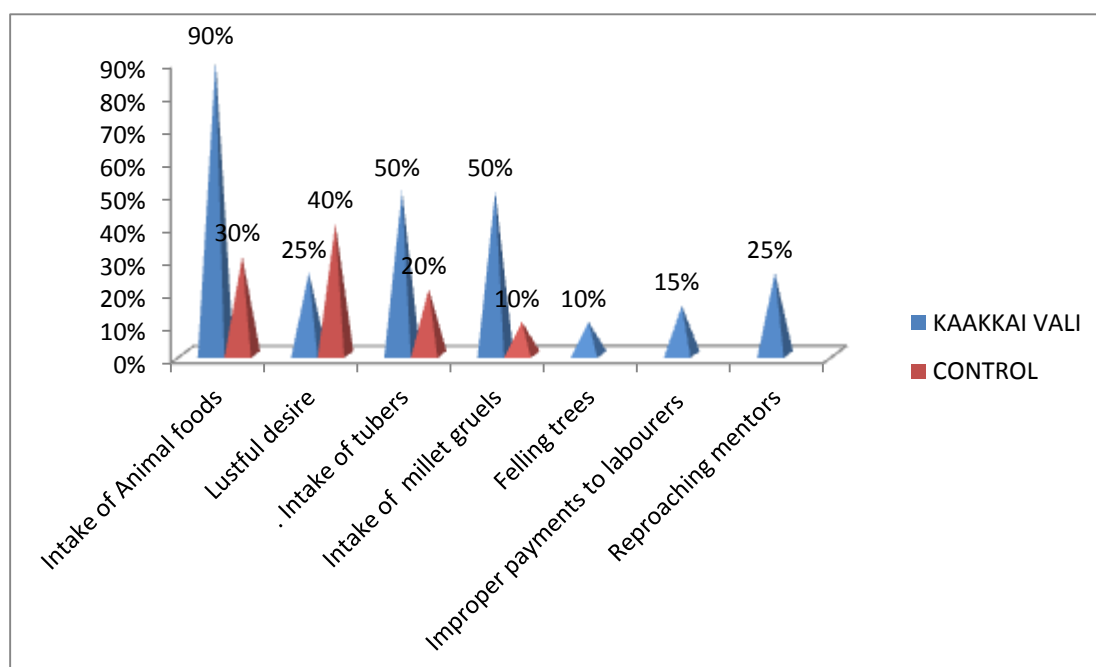
Among 20 cases, only 13 cases known about their zodiac sign & rest 7 didn't know about their zodiac sign. In 13 cases, 10% of cases were under Thulam, 10% under Simmam, 10% under Dhanusu, 5% under meenam, 5% under viruchigam, 5% under Mesam and 5% under Rishabam.

OBSERVATION IN HEALTHY VOLUNTEERS:

Among 10 cases, only 5 cases known about their zodiac sign & rest 5 didn't know about their zodiac sign. In 5 cases, 10% of cases were under Simmam, 10% under Dhanusu, 10% under Mesam, 10% under Rishabam and 10% under viruchigam.

TABLE.9.12.GENERAL ETIOLOGY FOR KAAKKAI VALI :

ETIOLOGY (AS PER AGATHIYAR VAITHIYA KAANDAM)	PATIENTS		HEALTHY VOLUNTEERS	
	No.of cases	Percentage	No.of cases	Percentage
Intake of Animal foods	18	90%	3	30%
Lustful desire	5	25%	4	40%
Intake of tubers	10	50%	2	20%
Intake of millet gruels	10	50%	1	10%
Felling trees	2	10%	-	-
Improper payments to labourers	3	15%	-	-
Reproaching mentors	5	25%	-	-



OBSERVATION: Out of 20 cases 90% of cases had history of intake of animal foods, 50% of cases had history of more intake of more tubers and 50% of cases had history of more intake of more millets , 25% of cases had history of lustful desire

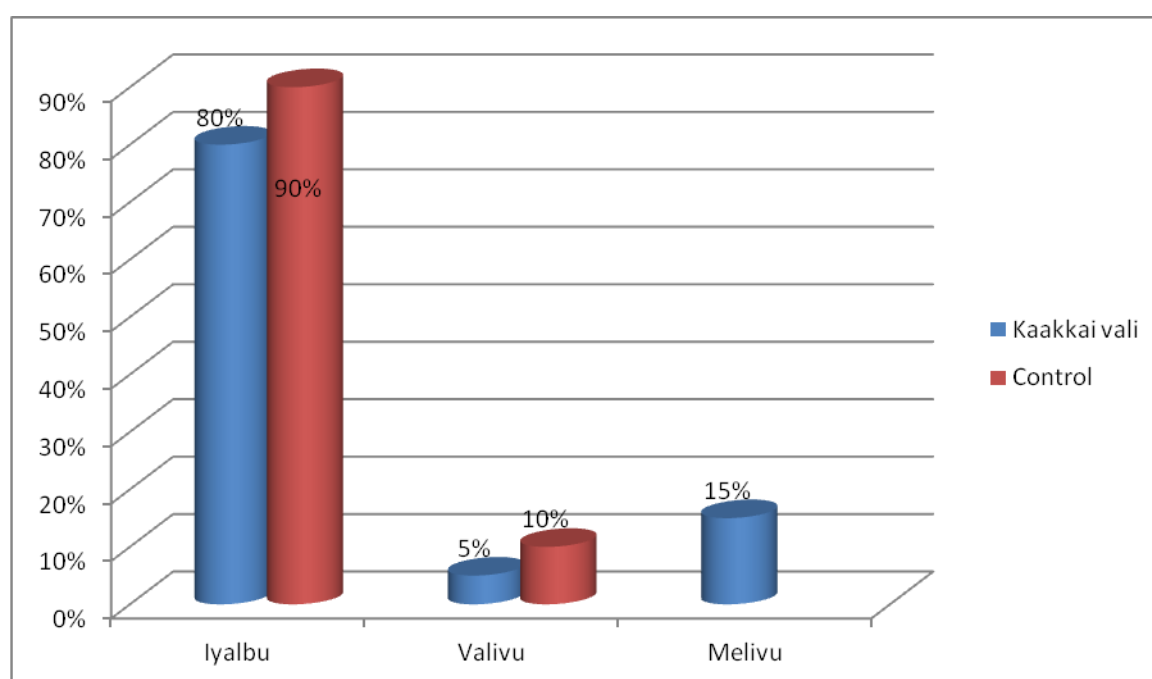
25% of cases had history of Reproaching mentors 15% of cases had history of Improper payments to labourers and 10% cases had history of Felling trees

INFERENCE:

From this study it is inferred that intake of animal foods precipitates the disease.

TABLE.9.13. UDAL VANMAI

Character	No of Cases	Percentage	No of Cases	Percentage
Iyalbu(Normal)	16	80%	9	90%
Valivu	1	5%	1	10%
Melivu	3	15%	0	0
Total	20	100%	10	100%



OBSERVATION:

Table No.9.13. shows that out of 20 patients 16 cases(80%) were Iyalbu, 1 case (5%) valivu,3 cases(15%) were melivu.

INFERENCE:

Majority of study patients were of Iyalbu and Melivu body built.

TABLE.9.14. DISTURBANCES IN VATHAM:

S.no	Types of vatham	Kaakkai vali patients		Healthy volunteers	
		No of cases	Percentage	No of cases	Percentage
1	Abanan	15	75%	0	0
2	Uthanan	13	65%	2	20%
3	Viyanan	15	75%	0	0
4	Samanan	15	75%	0	0
5	Nagan	10	50%	2	20%
6	Koorman	10	50%	0	0
7	Kirukaran	2	10%	0	0
8	Devathathan	12	60%	0	0

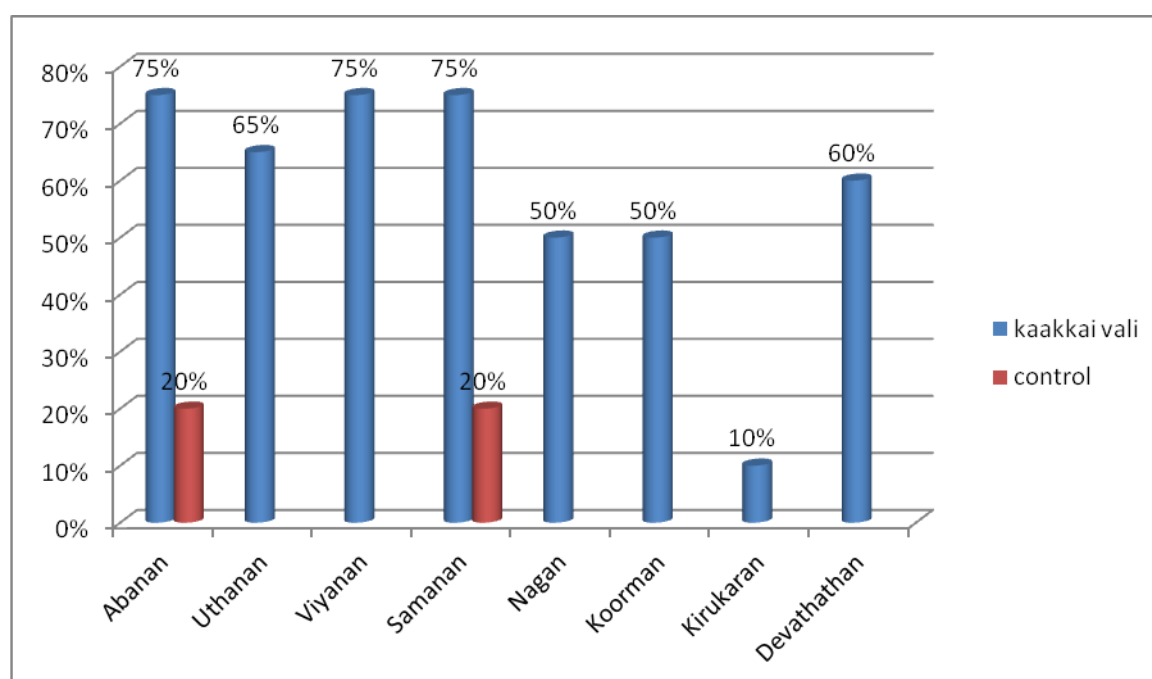
**OBSERVATION:**

Table No. 9.14. shows that in Vaayu, Abanan was affected in 15 (75%) cases, had incontinence of motion and urine. Viyanan was affected in 20(75%) cases had convulsions, Uthanan was affected in 15 (75%) cases had impaired consciousness. . Samanan was affected in 15 (75%) cases Naagan was affected in 15 (75%) cases had loss of consciousness during convulsion. Koorman was affected in 15 (75%) cases results in increased lacrimation. Kirugaran was affected in 5 (12.5 %) cases results in excessive salivation.

OBSERVATION IN CONTROL GROUP:

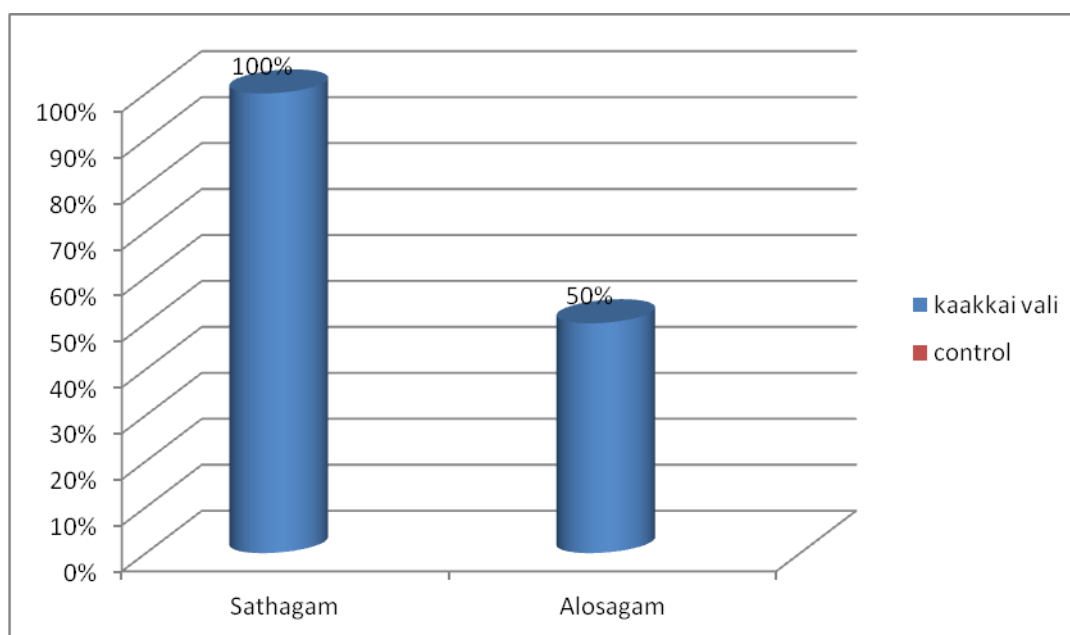
Among 20 cases, 20% cases had deranged Abanan, 20% cases had deranged Samanan, All cases had normal Pranan, uthanan, Viyanan, Naagan, Kirukaran, Koorman, Devadhathan and Dhananjeyan.

INFERENCE:

All the patients inducted in the study had abanan,viyaanan, Udhanan, Samanan,naagan, koorman And Kirukaran components of Vatha humour affected
No specific inference could be made among control group.

9.15. DISTURBANCES IN PITHAM:

S.no.	Types of Pitham	Kaakkai vali Patients		Healthy Volunteers	
		No of cases	Percentage	No of cases	Percentage
1	Analakam	-	-	0	0
2	Ranjagam			0	0
3	Sathagam	20	100%	0	0
4	Alosagam	10	50%	0	0
5	Prasagam			0	0



OBSERVATION:

Table No. **9.15.** shows that in all 40 cases Sathaga pitham was affected in 20 cases (100%) had impaired consciousness Alosagam gets affected in 15 cases (50%) had unable to see and know the objects around the patients during convulsion.

OBSERVATION IN CONTROL GROUP:

Out of 20 cases, 10% had deranged Anarpitham, All cases had normal Ranjagam, Prasagam, Sathagam & Alosagam.

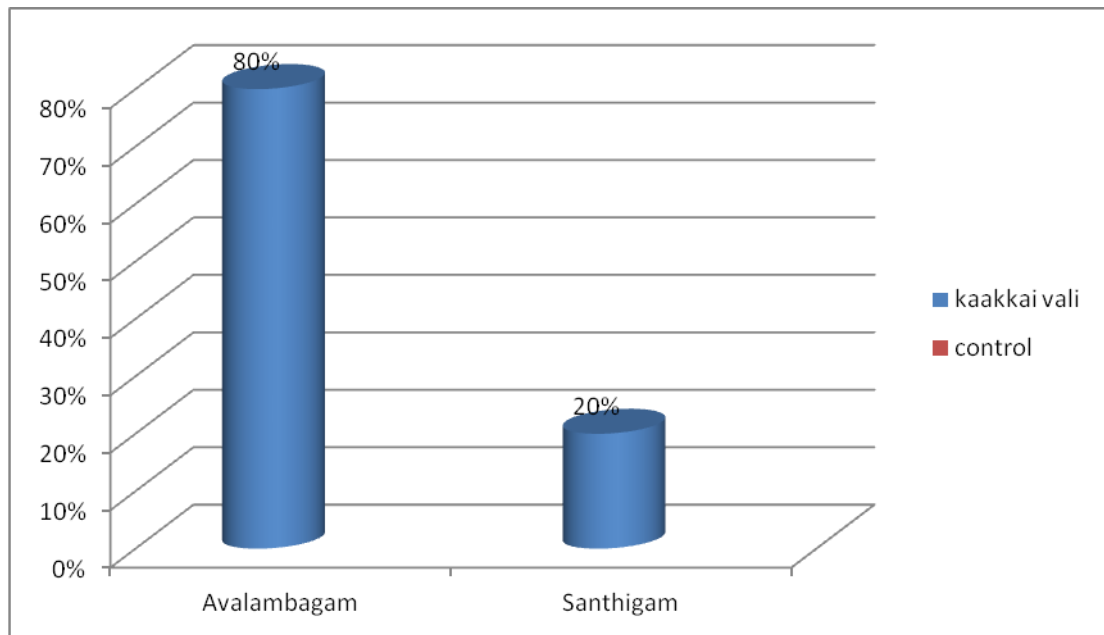
INFERENCE

The components of Pitham connected with vision and life energy (daily routine activities) are affected.

No specific inference could be made from derangements in Pitha humour.

9.16. DISTURBANCES IN KABAM:

S.no	Types of iyyam	Kaakkai vali Patients		Healthy volunteers	
		No of cases	Percentage	No of cases	Percentage
1	Avalambagam	16	80%	0	0
2	Klethagam	-	-	0	0
3	Pothagam	—	—	0	0
4	Tharpagam	-	-	0	0
5	Santhigam	4	20%	0	0



OBSERVATION:

Table No.9.16. shows that Avalambagam was affected in 12(60%) cases had cough. Santhigam was affected in 4 cases(20%) had joint pain.

OBSERVATION IN CONTROL GROUP.

All cases had normal Avalambagam, kiletham, Pothagam, Tharpagam, Santhigam.

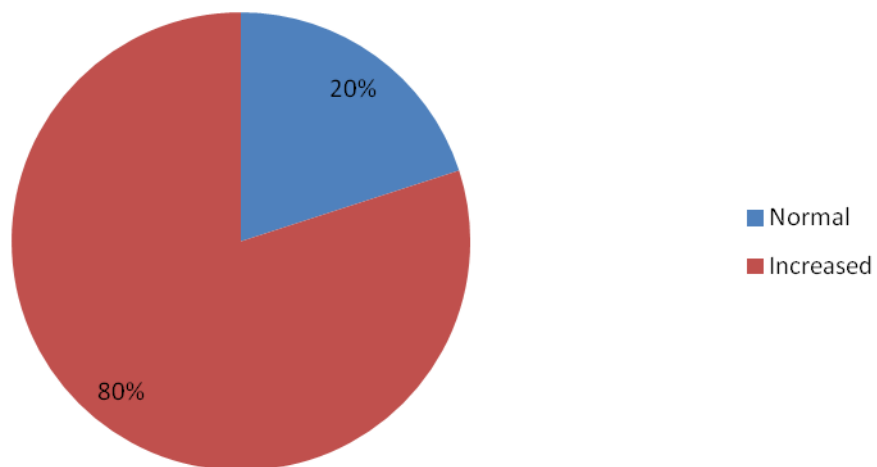
INFERENCE:

The components of Kabam connected with respiration and joint movements are affected. No specific inference could be made from control group.

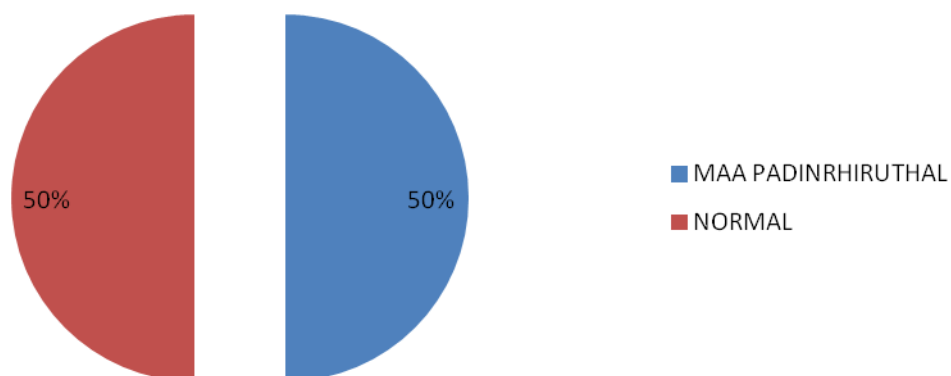
TABLE.9.17. ENVAGAI THERVUGAL (SIDDHA DIAGNOSTIC PARAMETERS)

NAA		PATIENTS		HEALTHY VOLUNTEERS	
		No.of cases	Percent age	No.of cases	Percent age
Thanmai (Appearance)	Maapadinthiruthal alone	5	25%	5	50%
	Veddippu alone	1	5%	-	-
	Maapadithal & vedippu	4	20%	-	-
	Normal	10	50%	5	50%
	Total	20	100%	10	100%
Niram (Colour)	Normal	18	90%	3	40%
	Manjal	1	5%	6	40%
	Velluppu	1	5%	1	20%
	Total	20	100%	10	100%
Suvai (Taste)	Uppu (Salty)	-	-	-	-
	Pullipu (Sour)	10	50%	-	-
	Kaippu (Bitter)	-	-	-	-
	Inippu (Sweet)	8	40%	1	10
	Normal	2	10%	9	90
	Total	20	100%	10	100
Vainer ooral (Salivation)	Normal	2	20%	10	100
	Increased	18	80%	-	-
	Decreased	-	-	-	-
	Total	20	100%	10	100%

Vaai neer ooral



NAA THANMAI IN HEALTHY VOLUNTEERS



OBSERVATION

Among 20 cases, 25% of cases had fissure alone in their tongue, 5% cases had coated tongue alone and 20% case had both coated tongue and fissures, Rest of 50% of cases had normal tongue.

Among 20 cases, 90% of cases had normal tongue, 5% of cases had pallor tongue, and 5 % of cases had yellow colour tongue.

Among 20 cases, 50% of cases had sour taste in their tongue, 40% of cases had sweet taste in their in tongue, 10% of cases had normal taste.

Among 20 cases, 80% of cases had increased salivation, and 20% had normal salivation.

OBSERVATION IN HEALTHY VOLUNTEERS:

Among 10 cases, 50% of cases had coated tongue alone, Rest of 50% of cases had normal tongue.

Among 10 cases, 40% of cases had normal tongue, 20% of cases had pallor tongue, and 40% of cases had yellow colour tongue.

Among 10 cases, 10% of cases had sweet taste in their in tongue, and 90% of cases had normal taste.

Among 10 cases, 100% had normal salivation.

INFERENCE

In the study majority of cases had Maa padithal & vedippu and some had pulipu & inippu suvai (taste) in tongue and increased salivation. As per the text Agathiar Naadi, pulipu taste in tongue is a sign of vatha derangement and inippu taste in tongue is a sign of deranged Kaba humour. So it may be inferred that deranged vatha and kaba humour forms the base for Kaakai vali

In Healthy volunteers, no specific inference could be made out in this study from the examination of tongue (Naa).



O.P.C98318-Normal Tongue



O.P.No.C86477 Maa Padithal

TABLE.9.18.NIRAM, MOZHI AND MEIKURI

NAME OF THE PARAMETER	THANMAI (CHARACTER)		PATIENTS		HEALTHY VOLUNTEERS	
			No.of cases	Percentage	No.of cases	Percentage
Niram (Complexion)	Karuppu (Dark)		10	50%	-	-
	Manjal		-	-	-	-
	Velluppu		8	40%	-	-
	Thontham		2	10%	10	100%
	Total		20	100%	10	100%
Mozhi (Voice)	Thanindha oli (Low Pitch)		1	5%	-	-
	Uratha oli (High Pitch)		1	5%	-	-
	Sama oli (Normal pitch)		18	90%	10	100%
	Total		20	100%	10	100%
Meikuri	Veppam (Warmth)	Mitha veppam	18	90%	10	100%
		Migu veppam	-	-	-	-
		Thatpam	2	10%	-	-
		Total	20	100%	10	100%
	Viyarvai (Sweating)	Normal	3	15%	10	100%
		Increased	17	85%	-	-
		Total	20	100%	10	100%
	Thodu vali (Tenderness)	Absent	20	100%	10	100%
		Present	-	-	-	-
		Total	20	100%	10	100%

OBSERVATION

Among the 20 cases, 50% of cases were of dark complexion, 40% of cases had fair/white complexion and 10% of cases were of thontham.

Among 20 cases, 5% of cases had high pitched voice, 5% of cases had low pitched voice and 90% had normal voice.

Among 20 cases, , 90% of cases had mitha veppam and 10% of cases had thatpam.

Among 20 cases, 85% of cases had increased (sweating) viyarvai and 15% had normal sweating.

Among 20 cases, no one don't have any tenderness.

NIRAM, MOZHI AND MEIKURI IN HEALTHY VOLUNTEERS

OBSERVATION

Among the 10 cases, 100% were thontham.

Among 10 cases, 100% had normal voice.

Among 10 cases, 100% had mitha veppam

Among 10 cases, 100% had normal sweating.

Among 10 cases, 100% of cases were without thoduvali

INFERENCE

A sizable percentage of patients reported with thontham niram& dark ,normal voice pitch, mitha veppam and increased sweating.Majority of cases affected are having dark complexion.(vatha humour) . 40% of cases had fair/white complexion(kaba humour).Increased sweating is a sign of kaba derangement.

In Healthy volunteers, no specific inference could be made out in this study from the examination of Niram, Mozhi and Meikuri.

TABLE.9.19.VIZHI (EYE) :

NAME OF THE PARAMETER		THANMAI (CHARACTER)	PATIENTS		HEALTHY VOLUNTEER	
			No.of cases	Perce ntage	No.of cases	Percent age
VIZHI	NIRAM	Karuppu (Muddy)	0	0	-	-
		Manjal (Yellow)	-	0	-	-
		Sivappu (Red)	2	10%	1	10%
		Vellupu (Pallor)	-	-	-	-
		No discolouration	18	90%	9	90%
		Total	20	100 %	10	100%
	THANMAI	Peelai serthal only	1	5%	0	0
		Increased kanner only	1	5%	0	0
		Erichal only	-	-	0	0
		Peelai serthal & kaneer	-	-	0	0
		Peelai serthal & erichal	1	5%	0	0
		Erichal & kaneer	-	0-	0	0
		All three	0	0	0	0
		Normal	17	85%	10	0
		TOTAL	20	100 %	10	100%

OBSERVATION

Among 20 cases, 10% of cases had sivappu venvizhi, & 90% of cases had no discolouration.

Out of 20 cases, 5% of cases had only erichal (burning sensation) in the eyes, 5 % had increased kanneer (lacrimation) only, 5% of cases had both erichal & kanneer, 85% of cases had normal eyes.

VIZHI (EYE) IN HEALTHY VOLUNTEERS

OBSERVATION

Among 10 cases, 1% of cases had sivappu venvizhi, 90% of cases had no discolouration.

Out of 40 cases, 100% of cases had normal eye.

INFERENCE

No specific inference could be made from vizhi examination.

9.20.MALAM

MALAM		PATIENTS		HEALTHY VOLUNTEERS	
		No.of cases	Percentage	No.of cases	Percentage
Thanmai	Sikkal only	1	5%	1	10%
	Siruthal only	1	5%	0	0
	Seetham	0	0	0	0
	kalichal	0	0	0	0
	Vemmai only	0	0	0	0
	Siruthal,sikkal,vemmai	0	0	0	0
	Normal	18	90%	9	90%
	Total	20	100%	10	100%
Niram (Colour)	Karuppu (Dark)	1	5%	0	0
	Manjal (Yellowish)	19	95%	10	100%
	Velluppu (Pallor)	0	0	0	0
	Total	20	100%	10	100%

OBSERVATION

Among 20 cases, 5% of cases had sikkal (constipation) only, 5% of cases had siruthal only, 0% of cases had Seetham (Mucosal mixing of stools) and kalichal, 90% of cases had no thanmai abnormality.

Among 20 cases, 95% of cases have manjal (yellowish) coloured stool, 0% of cases have velluppu (pallor) coloured stool, 5% of cases have karuppu (dark) coloured stool.

MALAM IN HEALTHY VOLUNTEERS

OBSERVATION

Among 10 cases, 10% of cases had sikkal (constipation) only, 90% of cases had no thanmai abnormality.

Among 10 cases, 100% of cases have manjal (yellowish) coloured stool,

INFERENCE

Almost all the cases and healthy volunteers had the character of normal stools. No specific inference could be made from Malam (Stool) examination.

9.21.NEER

I.NEERKURI

NEERKURI	PROPERTIES	PATIENTS		CONTROL	
		No.of cases	Percentage	No.of cases	Percentage
Niram	Pale yellow (Ila Manjal Niram)	18	90%	8	80
	Yellow	2	10%	2	20%
	Total	20	100%	10	100%
Manam (Smell)	Ammonical	17	85%	5	50%
	Fruity odour	0	0	-	-
	Odourless	3	15%	5	50%
	Total	20	100%	10	100%
Nurai (Frothy)	Absent	20	100%	10	100%
	Present	-	-	-	-
	Total	20	100%	10	100%
Edai (Density)	Normal	20	100%	10	100%
Enjal (Deposit)	Normal	20	100%	10	100%
	Polyuria	0	0	-	-
	Oliguria	0	0	-	-
	Total	40	100%	10	100%

OBSERVATION:

NEERKURI IN KAAKKAI VALI

Among 20 cases, 10 % of cases had yellow coloured urine and 90% of cases had pale yellow/straw coloured urine, 0% had Nurai (Froth) absent, 0 % of cases had polyuria & oliguria and 100% of case had normal volume, All cases had Normal Specific gravity & Deposits.

NEERKURI IN HEALTHY VOLUNTEERS

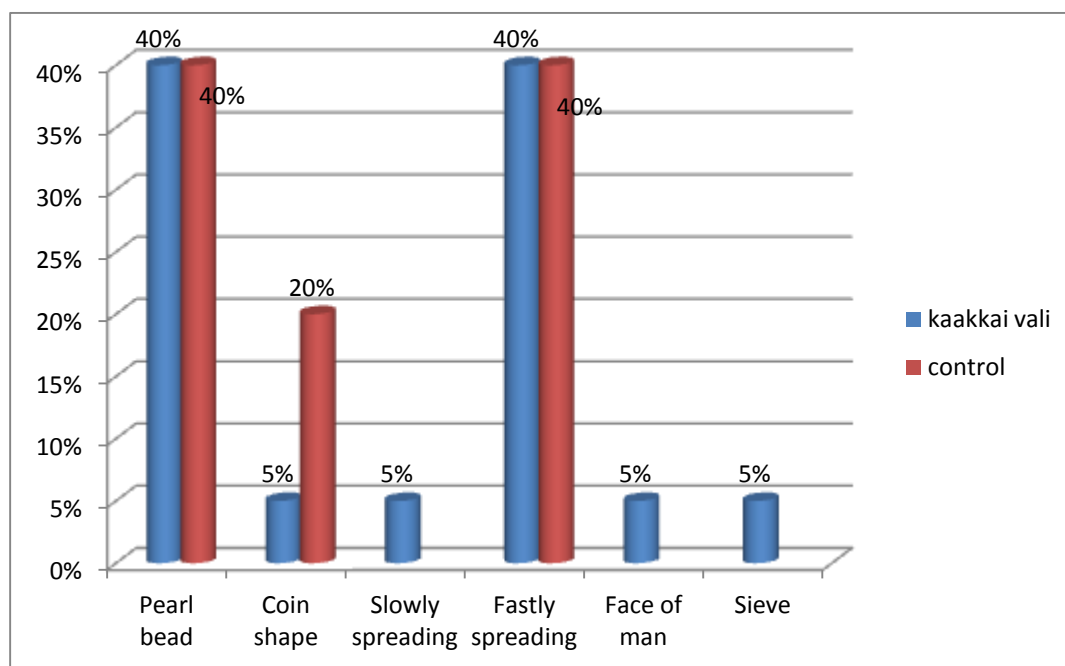
Among 20 cases, 20 % of cases had yellow coloured urine and 80 % of cases had pale yellow/straw coloured urine, 0% of cases had Nurai (Froth) present and 100% cases had Nurai (Froth) absent, 0 % of cases had polyuria & oliguria and 100% of case had normal volume, All cases had Normal Specific gravity & Deposits.

INFERENCE

Almost all the cases and healthy volunteers had normal urine Colour (Ila Manjal Niram) with mild aromatic smell and normal density and normal Enjal. No specific inference could be made out in this study from the examination of Neerkuri.

II.NEIKKURI

FEATURES OF OIL-ON-URINE SIGN	PATIENTS		HEALTHY VOLUNTEERS	
	No.of cases	Percentage	No.of cases	Percentage
Pearl bead	7	35%	4	40%
Coin shape	1	5%	2	20%
Slowly spreading	2	10%	-	-
Fastly spreading	8	40%	4	40%
Face of man	1	5%	-	-
Sieve	1	5%	-	-
Total	20	100%	40	100%



OBSERVATION

Among 20 cases, 35% of cases had Muthu (Pearl beaded) spread, 10% of cases had Mellana paraval (Sluggish spreading), 5% of cases had coin shape, 40% of cases had fastly spreaded neikkuri, 5% of cases had sieve shape and 5% had shape of face of the man.

INFERENCE

Majority of cases had pearl bead Neikkuri and Fastly spreading nature. As Per the text, the disease is caused due to derangement in Vathakabam. Thus it is evident that Vathakaba humour is affected in Kaakkai vali, hence majority of patients had pearl bead shape neikkuri and fastly spreading nature which is validated from the literature.

OBSERVATION

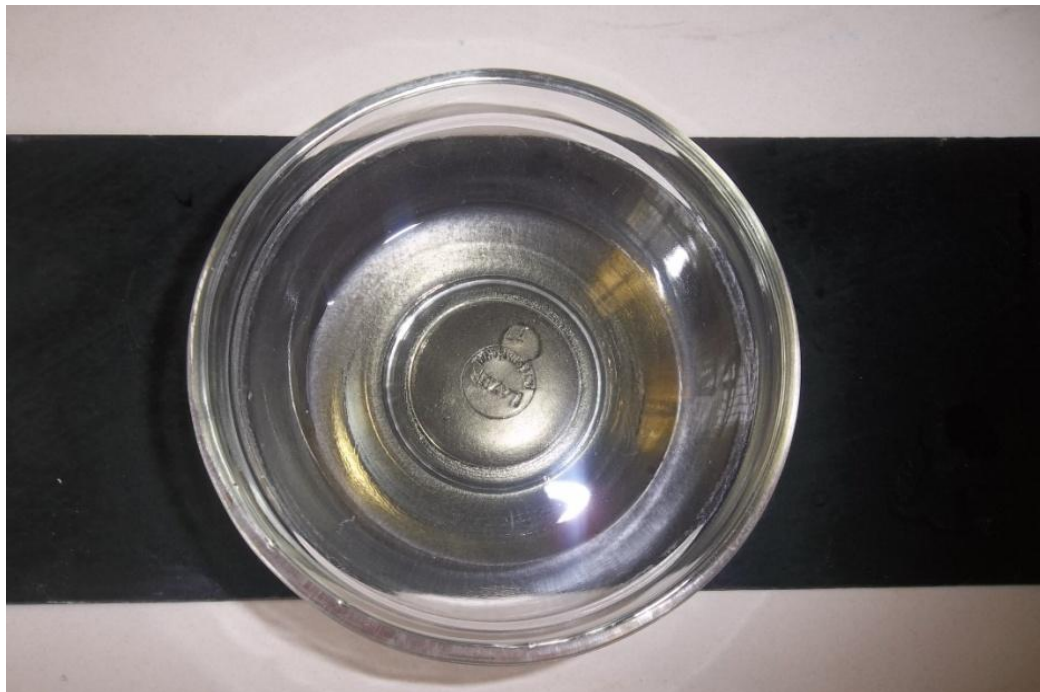
Among 10 cases, 40 % of cases had Muthu (Pearl beaded) spread, 40 % of cases had fastly spreading, 20% of cases had round shape.

INFERENCE

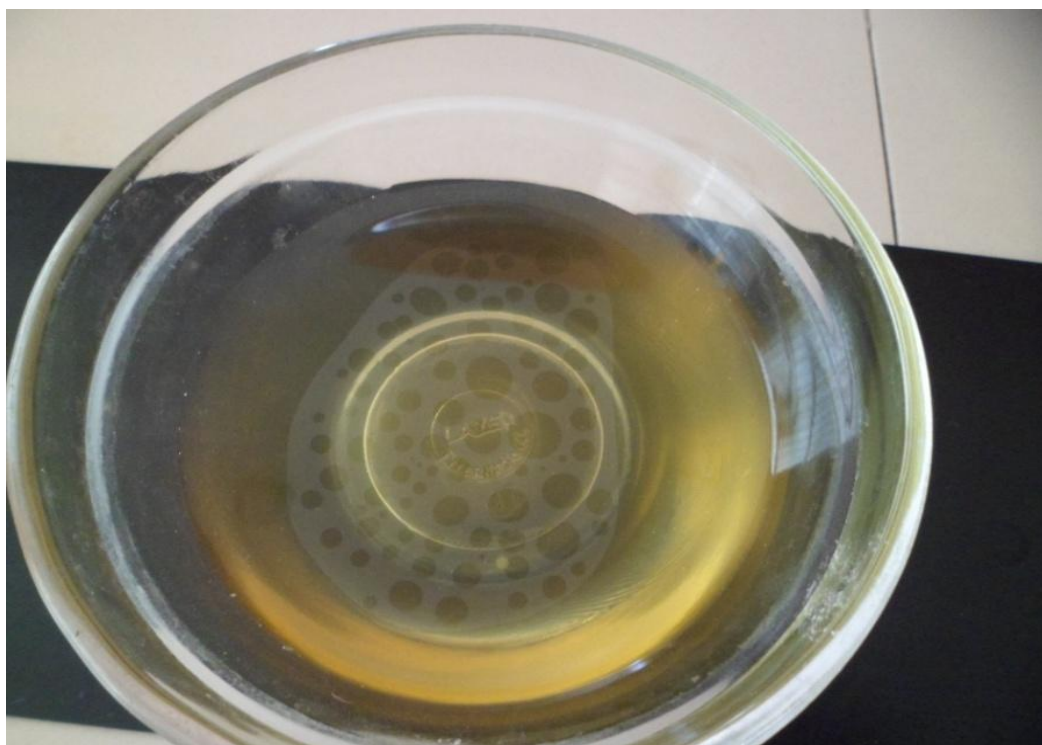
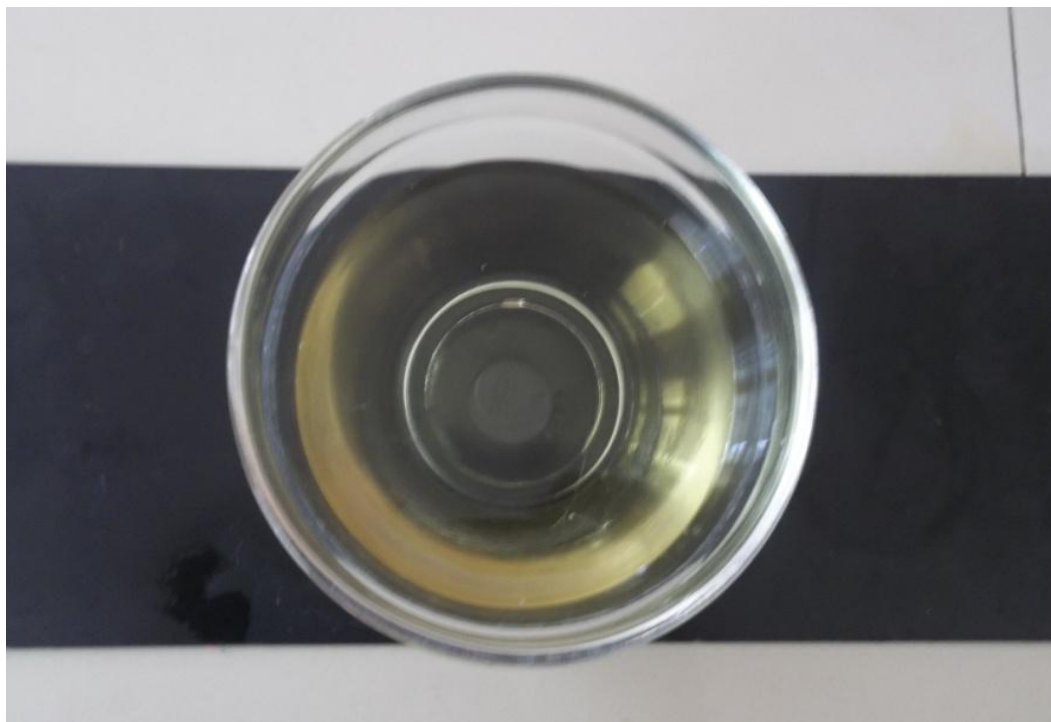
No specific inference could be made .

O.P.No.C86477

FINDINGS: PEARL BEAD(MUTHU)



O.P.No.C89891 **FINDINGS: coin shape**



O.P.No.B98503 **FINDINGS: sieve like**

O.P.No.C86306 **FINDINGS: Face of man**

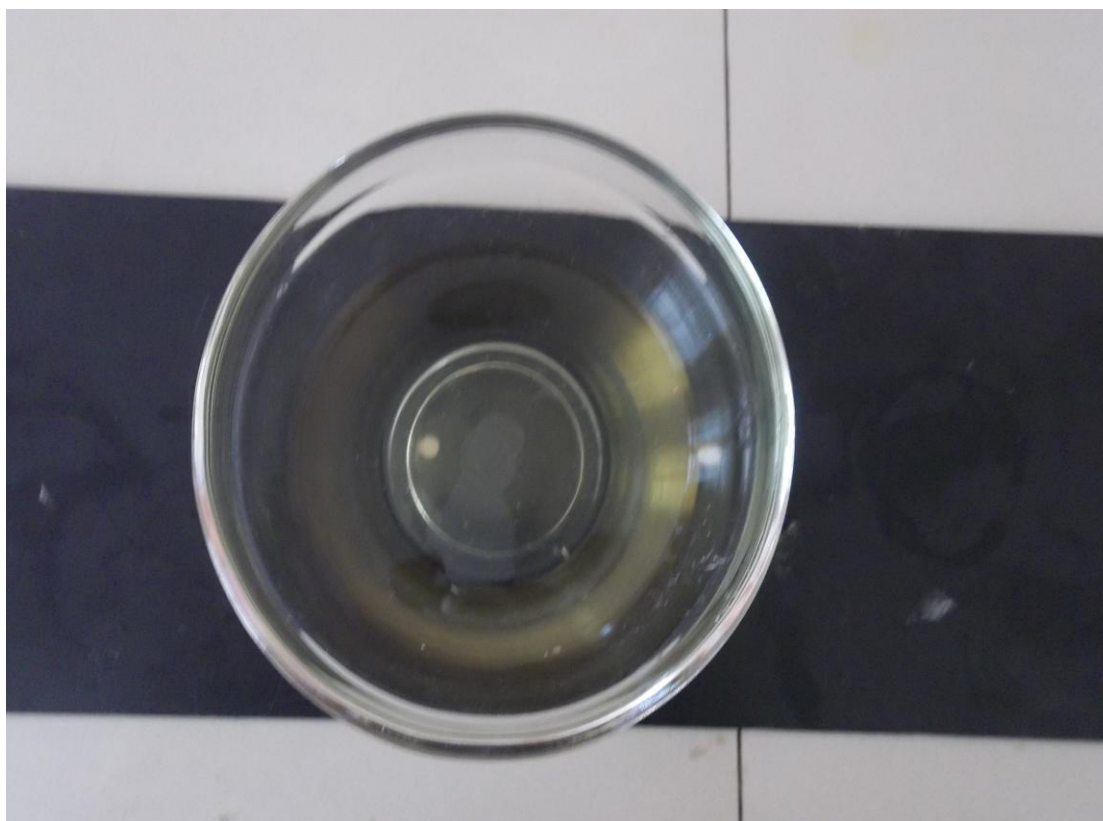
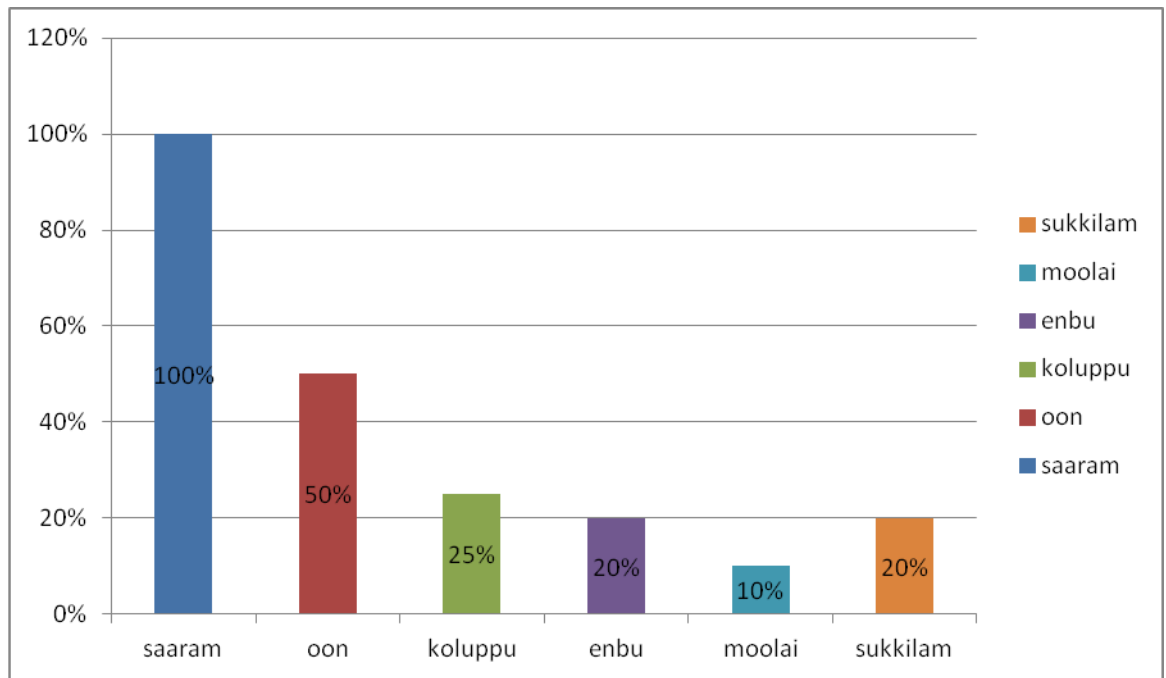


TABLE.9.22 UDAL THATHUKKAL:

UDAL THATHUKKAL	PATIENTS		CONTROL	
	No.of cases	Percentage	No.of cases	Percentage
Saaram	20	100%	0	0
Senneer	0	0	0	0
Oon	10	50%	0	0
Koluppu	5	25%	0	0
Enbu	4	20%	0	0
Moolai	2	10%	0	0
Sukkilam	4	20%	0	0



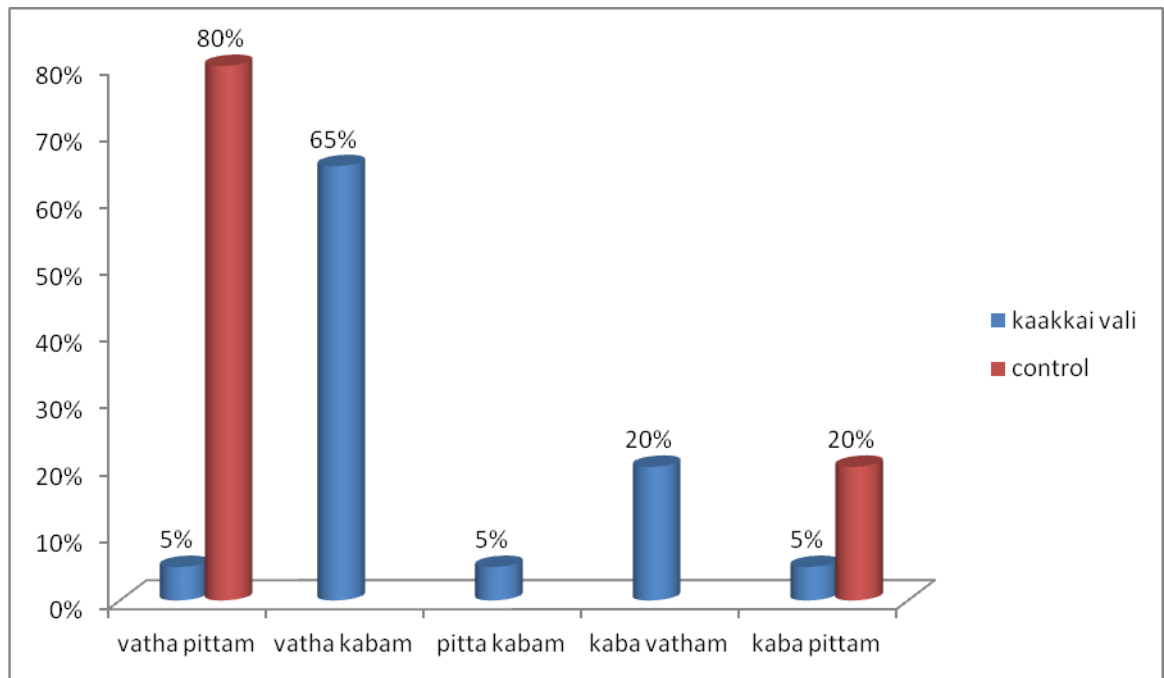
Observation: Table No.16 Shows that Saaram was affected in all the 20 cases (100%) results in body ache. Oon was affected in 10 cases(50%) Kozhuppu was affected in 5 Cases(25%) enbu was affected in 4cases (20%) moolai was affected in 2(10%) cases sukkilam was affected in 4 cases (20%)

INFERENCE:

Majority of the cases had deranged saaram, oon, kozhuppu ,enbu,moolai and sukkilam.

TABLE.9.23.NAADI NADAI

NAADI		PATIENTS		HEALTHY VOLUNTEERS	
		No.of cases	Percentage	No.of cases	Percentage
Naadi nithanam (Pulse Appraisal)	Vanmai	14	70	5	50%
	Menmai	6	30	5	50%
	Total	20	100%	10	100%
Naadi Panbu (Pulse character)	Thannadai	-	-	-	-
	Illaithal	10	50	2	20%
	Kuthithal	5	25	4	40%
	Thullal	5	25	4	40%
	Total	20	100%	-	-
Naadi Nadai (Pulse play)	Vatha pitham	1	5%	8	80%
	VathaKabam	13	65%	-	-
	Pitha Vatham	-		-	-
	Pitha Kabam	1	5%	-	-
	Kaba Vatham	4	20%	-	-
	Kaba pitham	1	5%	2	20%
	Total	20	100%	10	100%



OBSERVATION:

Out of the 20 cases, 70% of cases had Vanmai character and 30% cases had Menmai character in Naadi nithanam.

Among 20 cases, 50% of cases showed Illaithal, 25% of cases had kuthithal and 25% of cases had thullal character in their Naadi panbu.

Among 20 cases, 65% of cases had the naadinadai of Vatha kabam, 20% cases had Kaba vatham, 5% cases had Pitha kabam, 5% cases had Vatha Pitham and 5% cases had kaba Pitham.

OBSERVATION IN HEALTHY VOLUNTEERS:

Among 10 cases, 80% had Vatha pittam and 20% had kaba vatham.

INFERENCE:

Majority of cases (65%) had vatha kabam naadi. As per the text, Kaakkai vali which is caused due to vathakaba humour which is validated

TABLE.9.24.CLINICAL FEATURES OF KAAKKAI VALI

Symptoms	No .of patients observed	Percentage(%)
Periodic episodes of seizures	20	100%
Epileptic aura	12	60%
Dryness of the tongue	9	45%
Hypertonicity of the limbs.	13	65%
History of Confused state.	12	60%
History of Faecal incontinence	16	80%
History ofUrinaryincontinence	16	80%

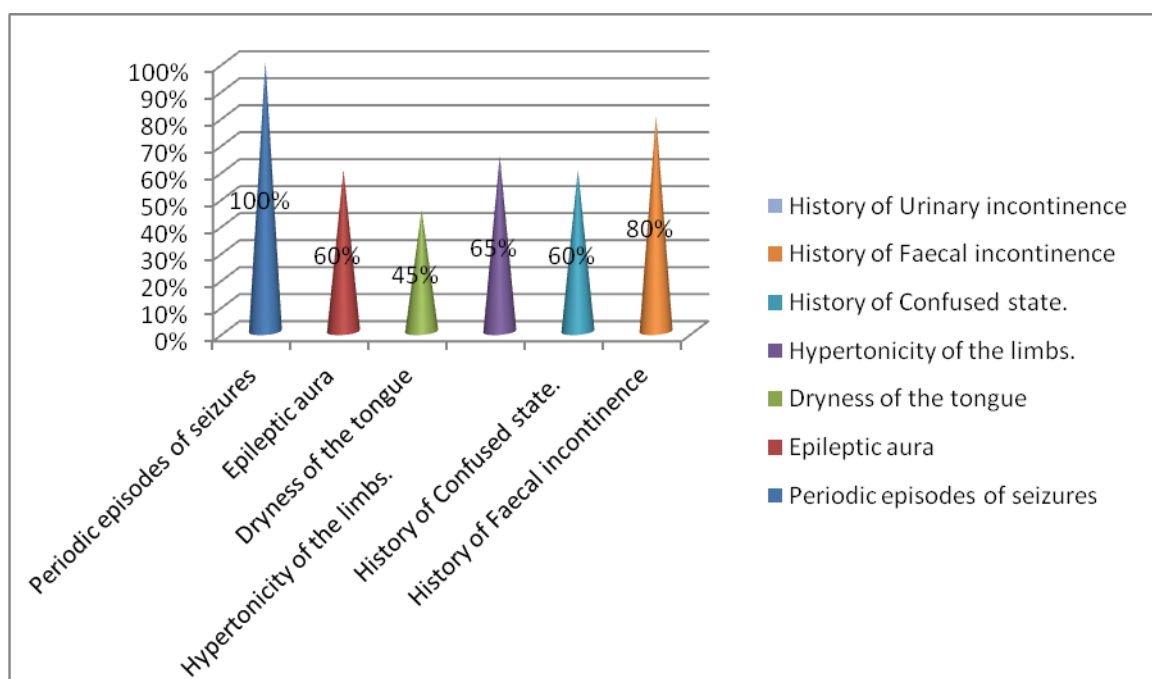
**OBSERVATION:**

Table No.20 shows that among the 20 cases,all cases had Periodic episodes of Seizures,80% cases had history of faecal incontinence,80%cases had urinary incontinence,60% cases had Epileptic aura,65% cases had hypertonicity of the limbs,60% cases had history of confused state and 45% cases had dryness of the tongue.

9.25 MANIKADAI NOOL IN KAAKKAI VALI (WRIST CIRCUMETRIC SIGN)

Majority of patients had $8 \frac{1}{4}$ manikkadai alavu. As per siddha text, Persons those who are having diseases of head have $8 \frac{1}{4}$ manikkadai alavu.

MANIKADAI NOOL IN HEALTHY VOLUNTEERS:

Out of the 10 cases, 20% of cases had $8 \frac{1}{2}$ viralkadai alavu, 20% of cases had 9 viral kadai alavu, 20% of cases had $9 \frac{1}{4}$ viralkadai alavu, 10% of cases had $9 \frac{1}{2}$ viral kadai.

TABLE.1 SHOWING LABORATORY INVESTIGATION REPORTS OF KAAKKAI VALI

LAB PARAMETERS																			
S.N O	OPD/IPD NO	AGE/S EX	Hb	TC	DC			TRB C	ESR (1/2-1 hr)	BLOOD SUGAR			S.CH O	HD L	LD L	TGL	UREA	CREAT	URIC ACID
					P	L	E			F	PP BS	R							
1	C86306	27/M	15.2	6100	52	43	5	5.1	2/4	92	109	-	150	30	107	70	21	0.7	5.4
2	C89486	45/M	14.5	6700	50	43	7	4.5	2/4	89	106	-	162	36	120	162	14	0.4	3.0
3	C83953	21/M	14.4	7200	45	51	4	4.6	4/8	-	-	123	185	31	124	146	25	0.6	3.9
4	C75424	33/M	16.4	9900	63	27	10	4.9	2/4	107	123		190	30	134	131	21	0.6	4.5
5	C80896	26/M	15.2	9600	45	51	4	4.6	3/6	110	142	-	152	35	142	152	25	0.5	4.1
6	C86477	50/M	14.1	9800	45	50	5	4.8	4/8	95	130	-	145	38	147	148	20	0.5	4.0
7	C89891	19/M	13.5	9600	47	47	6	5.2	5/10	98	135	-	147	39	154	155	19	0.6	4.1
8	C89255	38/M	14.8	6100	64	26	10	5.3	2/4	110	153	-	148	33	159	82	30	0.8	5.7
9	C62793	29/M	11.5	7700	51	47	2	4.1	6/12	103	123	-	240	46	150	220	15	0.6	6.9
10	B65039	18/F	12.6	6700	40	52	7	4.0	2/4	101	111	-	124	30	109	155	14	0.4	2.6
11	C79818	42/M	12.8	8400	57	39	4	4.1	4/8	96	104	-	168	35	115	162	15	0.5	4.3
12	B79182	33/M	15.3	9100	66	30	4	4.9	2/4	86	125	-	136	29	69	52	25	0.7	7.2
13	B98503	25/F	12.4	6300	71	22	6	4.1	4/8	93	152	-	239	35	100	84	16	0.5	3.2
14	C33690	31/M	14.8	6000	52	44	4	5.3	4/8	84	125	-	143	34	82	148	23	0.8	3.6
15	C94654	23/F	13.5	9900	45	48	7	5.0	4/8	88	110	-	145	36	100	145	20	0.5	3.9
16	C80893	37/M	15.0	10000	48	46	6	5.1	3/6	84	101	-	148	37	120	152	22	0.6	3.4
17	C98318	28/M	14.2	9300	47	47	6	5.2	2/4	88	123	-	154	30	107	70	21	0.7	5.4
18	C97421	29/M	15.3	9800	45	48	7	5.0	2/4	98	110	-	162	36	120	162	14	0.4	3.0
19	D0004365	35/F	15.2	6500	71	22	6	5.2	4/8	-	-	129	152	34	125	154	26	0.5	3.1
20	D002489	19/F	15.6	6800	58	40	2	5.2	3/6	-	-	140	152	31	84	142	22	0.6	3.1

TABLE.2 SHOWING LABORATORY INVESTIGATION REPORTS OF KAAKKAI VALI

S.No	OPD NO	AGE/SEX	T.B	SGOT	SGPT	AKP	TP	CAL	PHOS	URINE				MOTION		
										ALB	SUGAR	PUS CELLS	EPI CELLS	OVA	CYST	OCC.BLD.
1	C86306	27/M	0.5	11	12	141	6.9	3.1	5.4	Nil	Nil	1-2	1-2	Nil	Nil	Negative
2	C89486	45/M	0.6	16	17	156	7.1	10.8	2.9	Nil	Nil	2-4	3-5	Nil	Nil	Negative
3	C83953	21/M	0.5	15	20	144	6.8	9.3	3.2	Nil	Nil	2-4	2-4	Nil	Nil	Negative
4	C75424	33/M	0.7	32	39	263	7.2	3.9	4.5	Nil	Nil	2-3	2-3	Nil	Nil	Negative
5	C80896	26/M	0.6	30	27	143	7.1	8.9	4.4	Nil	Nil	1-2	1-2	Nil	Nil	Negative
6	C86477	50/M	0.7	29	30	121	7.0	8.8	4.0	Nil	Nil	2-4	2-4	Nil	Nil	Negative
7	C89891	19/M	0.8	26	28	145	6.9	9.5	3.9	Nil	Nil	2-3	2-3	Nil	Nil	Negative
8	C89255	38/M	0.5	24	25	156	7.4	3.0	5.7	Nil	Nil	2-4	2-4	Nil	Nil	Negative
9	C62793	29/M	0.4	27	25	391	8.0	4.2	6.9	Nil	Nil	2-3	2-3	Nil	Nil	Negative
10	B65039	18/F	0.4	11	12	148	6.7	9.8	2.8	Nil	Nil	1-2	1-2	Nil	Nil	Negative
11	C79818	42/M	0.5	15	16	146	7.5	10.6	3.2	Nil	Nil	2-4	3-6	Nil	Nil	Negative
12	B79182	33/M	0.6	32	33	182	7.4	3.0	7.2	Nil	Nil	3-4	3-4	Nil	Nil	Negative
13	B98503	25/F	0.7	61	56	156	7.4	11.0	3.2	Nil	Nil	1.2	3-4	Nil	Nil	Negative
14	C33690	31/M	0.4	29	30	183	6.8	3.1	3.6	Nil	Nil	1-2	2-4	Nil	Nil	Negative
15	C94654	23/F	0.4	14	15	145	6.7	8.0	3.5	Nil	Nil	2-4	2-4	Nil	Nil	Negative
16	C80893	37/M	0.5	31	32	180	7.0	8.1	3.7	Nil	Nil	2-4	2-4	Nil	Nil	Negative
17	C98318	28/M	0.4	60	55	155	7.2	9.0	3.9	Nil	Nil	1-2	2-4	Nil	Nil	Negative
18	C97421	29/M	0.5	28	29	182	6.9	9.5	3.8	Nil	Nil	2-4	2-4	Nil	Nil	Negative
19	D0004365	35/F	0.6	27	28	144	6.8	10.0	3.5	Nil	Nil	2-4	2-4	Nil	Nil	Negative
20	D002489	19/F	0.4	30	31	140	7.1	9.9	3.4	Nil	Nil	1-2	2-4	Nil	Nil	Negative

TABLE.3 SHOWING ENN VAGAI THERVUGAL (EIGHT FOLD EXAMINATIONS) RESULTS OF KAAKKAI VALI

S.NO	OP NO	AGE/ SEX	NAADI	NAA	NIRAM	MOZHI	VIZHI	MALAM	MOOTHIRAM		SPARISAM
									NEERKURI	NEIKURI	
1	C86306	27/M	VALI IYAM	PULIPPU	KARUPPU	SAMA OLI	KANNER ,NODISCOLOURATION	MANJAL	PALE YELLOW	FACE OF MAN	MITHA VEPPAM
2	C89486	45/M	VALI AZHAL	PULIPPU MAAPADITHA L ,VEDIPPU	KARUPPU	SAMA OLI	NO DISCOLOURATION	MANJAL	PALE YELLOW	FASTLY SPREAD	MITHA VEPPAM
3	C83953	21/M	VALI IYAM	PULIPPU	KARUPPU	SAMA OLI	SIVAPPU	MANJAL	PALE YELLOW	PEARL BEAD	MITHA VEPPAM
4	C75424	33/M	AZHALIYAM	MAAPADITHA L ,VEDIPPU INIPPU	WHEATISH	SAMA OLI	NODISCOLOURATION	MANJAL	PALE YELLOW	FASTLY SPREAD	MITHA VEPPAM
5	C80896	26/M	VALI IYAM	PULIPPU	KARUPPU	THAZHNTHA OLI	SIVAPPU	MANJAL	PALE YELLOW	PEARL BEAD	MITHA VEPPAM
6	C86477	50/M	IYYA AZHAL	MAAPADITHA L, INIPPU	KARUPPU	URATHA OLI	NODISCOLOURATION	MANJAL	PALE YELLOW	PEARL BEAD	MITHA VEPPAM
7	C89891	19/M	VALI IYAM	MAAPADITHA L ,INIPPU	WHEATISH	SAMA OLI	NODISCOLOURATION	KARUPPU	PALE YELLOW	COIN	MITHA VEPPAM
8	C89255	38/M	VALI IYAM	MAAPADITHA L, PULIPPU	WHEATISH	SAMA OLI	NODISCOLOURATION	MANJAL	PALE YELLOW	PEARL	THATPAM
9	C62793	29/M	VALI IYAM	INIPPU	WHEATISH	SAMA OLI	NODISCOLOURATION	MANJAL	PALE YELLOW	PEARL	MITHA VEPPAM
10	B65039	18/F	IYAVALI	INIPPU	THONTHAM	SAMA OLI	PEELAI SERUTHAL & ERICHAL, NODISCOLOURATION	MANJAL	PALE YELLOW	PEARL BEAD	MITHA VEPPAM

TABLE.4 SHOWING ENN VAGAI THERVUGAL (EIGHT FOLD EXAMINATIONS) RESULTS OF KAAKKAI VALI

S.NO	OP NO	AGE/ SEX	NAADI	NAA	NIRAM	MOZHI	VIZHI	MALAM	MOOTHIRAM		SPARISM
									NEERKURI	NEIKURI	
11	C79818	42/M	IYA VALI	PULIPPU	WHEATISH	SAMA OLI	NODISCOLOURA TION	MANJAL	PALE YELLOW	PEARL BEAD	MITHA VEPPAM
12	B79182	33/M	IYA VALI	INIPPU MAAPADITHAL	KARUPPU	SAMA OLI	NODISCOLOURA TION	MANJAL	PALE YELLOW	PEARL BEAD	THATPA M
13	B98503	25/F	VALI IYAM	INIPPU	KARUPPU	SAMA OLI	NODISCOLOURA TION	MANJAL	PALE YELLOW	SEIVE	MITHA VEPPAM
14	C33690	31/M	VALI IYAM	MAAPADITHAL VEDIPPU INIPPU	KARUPPU	SAMA OLI	NODISCOLOURA TION	MANJAL	PALE YELLOW	FASTLY SPREAD	MITHA VEPPAM
15	C94654	23/F	VALI IYAM	PULIPPU	WHEATISH	SAMA OLI	NODISCOLOURA TION	MANJAL	YELLOW	FASTLY SPREAD	MITHA VEPPAM
16	C80893	37/M	VALI IYAM	MAAPADITHAL PULIPPU	KARUPPU	SAMA OLI	NODISCOLOURA TION	MANJAL	YELLOW	FASTLY SPREAD	MITHA VEPPAM
17	C98318	28/M	VALI IYAM	PULIPPU	WHEATISH	SAMA OLI	NODISCOLOURA TION	MANJAL	PALE YELLOW	FASTLY SPREAD	MITHA VEPPAM
18	C97421	29/M	VALI IYAM	MAAPADITHAL VEDIPPU,MANJAL, PULIPPU	KARUPPU	SAMA OLI	NODISCOLOURA TION	MANJAL	PALE YELLOW	FASTLY SPREAD	MITHA VEPPAM
19	D4365	35/F	VALI IYAM	VELLUPPU,- NORMAL SALIVATION	WHEATISH	SAMA OLI	NODISCOLOURA TION	MANJAL	PALE YELLOW	FASTLY SPREAD	MITHA VEPPAM
20	D002489	19/F	IYA VALI	MANJAL ,VEDIPPU NORMAL SALIVATION	THONTHAM	SAMA OLI	PEELAI SERUTHAL	MANJAL	PALE yELLOW	SLOWLY SPREADING	MITHA VEPPAM

TABLE.5 SHOWING ENVAGAI THERVU RESULTS OF KAAKKAI VALI

S.NO	OP NO	AGE/SEX	TYPE OF DEGI	MANIKKADAI NOOL	RASI	NATCHATHIRAM
1	C86306	27/M	VATHAKABAM	8	NOT KNOWN	NOT KNOWN
2	C89486	45/M	VATHAPITTAM	8	NOT KNOWN	NOT KNOWN
3	C83953	21/M	VATHAKABAM	8 ¼	NOT KNOWN	NOT KNOWN
4	C75424	33/M	PITTAKABAM	8 ¼	KUMBAM	NOT KNOWN
5	C80896	26/M	VATHAKABAM	8 ¼	THULAM	NOT KNOWN
6	C86477	50/M	KABAPITTAM	8 ¼	NOT KNOWN	NOT KNOWN
7	C89891	19/M	VATHAKABAM	8 ¼	DHANUSU	MOOLAM
8	C89255	38/M	VATHAKABAM	8 ¼	SIMMAM	MAGAM
9	C62793	29/M	VATHAKABAM	8 ¼	NOT KNOWN	NOT KNOWN
10	B65039	18/F	KABAVATHAM	8	SIMMAM	POORAM

TABLE.6 SHOWING ENVAGAI THERVU RESULTS OF KAAKKAI VALI

S.N O	IP/OP NO	AGE/SEX	TYPE OF DEGI	MANIKKADAI NOOL	RASI	NATCHATHIRAM
11	C79818	42/M	KABAVATHAM	8	NOT KNOWN	NOT KNOWN
12	B79182	33/M	KABAVATHAM	8	NOT KNOWN	NOT KNOWN
13	B98503	25/F	VATHAKABAM	8 ¼	KUMBAM	NOT KNOWN
14	C33690	31/M	VATHAKABAM	8 ¼	DHANUSU	MOOLAM
15	C94654	23/F	VATHAKABAM	8 ¼	THULAM	NOT KNOWN
16	C80893	37/M	VATHAKABAM	8 ¼	VIRUCHIGAM	NOT KNOWN
17	C98318	28/M	VATHAKABAM	8 ¼	MESHAM	NOT KNOWN
18	C97421	29/M	VATHAKABAM	8 ¼	RISHABAM	NOT KNOWN
19	D0004365	35/F	VATHAKABAM	8 ¼	KUMBAM	NOT KNOWN
20	D002489	19/F	KABAVATHAM	8	MEENAM	NOT KNOWN

TABLE.7 SHOWING ENN VAGAI THERVUGAL (EIGHT FOLD EXAMINATIONS) RESULTS OF HEALTHY VOLUNTEERS

S.NO.	OP NO	AGE/ SEX	NAADI	NAA	NIRAM	MOZHI	VIZHI	MALAM	MOOTHIRAM		SPARISM
									NEERKU RI	NEIKURI	
1	C72223	37/M	IYYA AZHAL	MAAPADITHAL	WHEATISH	SAMA OLI	NORMAL	MANJAL	YELLOW	PEARL	MITHA VEPPAM
2	D15789	27/ F	IYYA AZHAL	NORMAL	WHEATISH	SAMA OLI	NORMAL	MANJAL	PALE YELLOW	PEARL	THATPAM
3	D15797	24/ F	VALI AZHAL	NORMAL	WHEATISH	SAMA OLI	NORMAL	MANJAL	PALE YELLOW	MELLANA PARAVAL	MITHA VEPPAM
4	D13393	26/ F	VALI AZHAL	MAAPADITHAL	WHEATISH	SAMA OLI	NORMAL	MANJAL	PALE YELLOW	PEARL	MITHA VEPPAM
5	C33345	38/M	VALI AZHAL	NORMAL	WHEATISH	SAMA OLI	NORMAL	MANJAL	PALE YELLOW	PEARL	MITHA VEPPAM
6	C33793	37/M	VALI AZHAL	MAAPADITHAL	WHEATISH	SAMA OLI	REDDISH	MANJAL	YELLOW	MELLANA PARAVAL	MITHA VEPPAM
7	C33782	32/M	VALI AZHAL	MAA PADITHAL	WHEATISH	SAMA OLI	NORMAL	KARUPPU	PALE YELLOW	PEARL	MITHA VEPPAM
8	C33366	50/M	VALI AZHAL	MAAPADITHAL	WHEATISH	SAMA OLI	NORMAL	MANJAL	PALE YELLOW	ROUND	THATPAM
9	C33524	26/M	VALI AZHAL	NORMAL	WHEATISH	SAMA OLI	NORMAL	MANJAL	PALE YELLOW	PEARL	MITHA VEPPAM
10	C33790	25/M	VALI AZHAL	MAAPADITHAL	WHEATISH	SAMA OLI	NORMAL	MANJAL	PALE YELLOW	PEARL	MITHA VEPPAM

TABLE.8 SHOWING ENN VAGAI THERVUGAL (EIGHT FOLD EXAMINATIONS) RESULTS OF HEALTHY VOLUNTEERS

S.NO	OP NO	AGE/ SEX	TYPE OF DEGI	MANIKKADAI NOOL	RASI	NATCHATHIRAM
1	C72223	37/M	VATHA PITHAM	10	SIMMAM	MAGAM
2	D15789	27/ F	VATHA PITHAM	9 $\frac{3}{4}$	DHANUSU	POORADAM
3	D15797	24/ F	VATHA PITHAM	8 $\frac{1}{2}$	NOT KNOWN	NOT KNOWN
4	D13393	26/ F	PITHA VATHAM	10	RISHABAM	NOT KNOWN
5	C33345	38/M	KABA PITHAM	9 $\frac{1}{4}$	MESHAM	NOT KNOWN
6	C33793	37/M	KABA VATHAM	9	NOT KNOWN	NOT KNOWN
7	C33782	32/M	KABA VATHAM	9 $\frac{1}{4}$	DHANUSU	NOT KNOWN
8	C33366	50/M	VATHA PITHAM	9 $\frac{1}{2}$	SIMMAM	NOT KNOWN
9	C33524	26/M	VATHA PITHAM	8 $\frac{1}{2}$	NOT KNOWN	NOT KNOWN
10	C33790	25/M	VATHA KABAM	9	MESHAM	NOT KNOWN

DISCUSSION

“Kaakkai vali” is one among the seven types of Valippu diseases . It is a clinical entity, which features in the book Agathiayar vaithiya Kaandaam is a treatise by Sage Agathiyar.

The author explains all the facts of the disease “Kaakkai vali” with modern and Siddha literatures based on observation and results. The author had screened 50 patients of Kaakkai vali in the out patient department of Ayothidoss Pandithar Hospital, National Institute of Siddha, Chennai-47. Among those 50 cases, 20 cases were enrolled in the study and observed for the signs and symptoms.

Among the 20 cases, males outnumbered females (70%- 30%)

From the study, 95% of cases were non-vegetarian. The general population status is reflected in the study population and no specific inference could be made with respect to the study.

Among the 20 cases the prevalence of the disease was found to be higher in the age group 26-35 years (37.50%) and next one is 15-25 years (22.50%) age group and next one is 36-45 years (20.00%) .The common cause of Kaakkai vali is caused due to vitiated Vatha humour which initiates Pitta and Kaba humour. As per the Siddha concept, the Vatha humour (below 33 yrs) was affected.

From the above study, it was inferred that the incidence of the disease was found to be higher in Lower economic groups 80%.

In this study, Most of the cases (95%) were hailing from Neithal region. As per Pathartha Guna chinthamani, people residing in Neithal regions are prone to develop Kabha derangements. But because of single centric study, (study done in National Institute of Siddha) type and the location of study place near Neithal area, this could not be properly inferred.

Among the 20 cases, all (100%) were found to possess Thamo gunam. Most of the cases (80%) were reported from Neithal nilam, the remaining 20% of cases were reported from Marutha Nilam.

Majority of the cases were affected in Kaarkaalam season. As per the text, monsoon and cold items act as triggering factors for the initiation of Valipu noi.

Among the 20 cases majority of them are machine operators who overwork for more than 10 hours, have more stress related problems, this is reflected in the study. Next, Home makers and students are more affected who also have more tension nowadays. Most of them were affected in the duration of more than 12 months.

Among 20 cases, 75% of cases came under Vatha kaalam ie., 0-33yrs and 25% of cases fall under Pitha kaalam(34-66yrs).

In the study majority of the patients fell in Vatha kaalam. As most of the patients are in Vatha kaalam, this is because around the age group 30 yrs people are socially active so they are more prone to get exposed to exterior environment, this is reflected the study. As per the Siddha Text, Vali noi is caused due to vitiated Vatha humour which is reflected in the study.

Among 20 cases, only 13 cases knew about their zodiac signs & rest (7) didnot know about their zodiac sign. In 13 cases , 10% of cases were of Thulam, 10% of Simmam, 10% of Dhanusu ,5% under meenam , 5% of viruchigam, 5% of Mesam and 5% of Rishabam.

From the study it is inferred that, majority of the patients (80%) were suffering from this disease for more than a year; it is understood from this study that Kaakkai vali (Grandmal Epilepsy) tends to run a chronic course in many patients.

According to Agathiyar Vaithiya kaandam, the etiology of Kaakkai vali includes Intake of Animal foods, Lustful desire, Intake of tubers, Intake of millet gruels, Felling trees, Deceit of payments to labourers and Reproaching mentors. In the study, 90% of cases had history of intake of animal foods, 50% of cases had history of more intake of more tubers and 50% of cases had history of more intake of more millets , 25% of cases had history of lustful desire 25% of cases had history of Reproaching mentors

In the twenty cases, majority of study patients were of Iyalbu and Melivu body built.

In the study majority of cases had Maa padithal & vedippu and some had pulipu & inippu suvai (taste) in tongue and increased salivation. Majority of the patients (80%) had increased salivation which is one of the main symptoms in Kaakkai vali (Grandmal Epilepsy). As per the text Agathiar Naadi, pulipu taste in tongue is a sign of Vatha derangement and inippu taste in tongue is a sign of

deranged Kaba humour. So it may be inferred that deranged Vatha and Kaba humour forms base for the genesis of Kaakkai vali. In Healthy volunteers, no specific inference could be made out in this study from the examination of tongue (Naa).

A sizable percentage of patients reported with thontham niram& dark ,normal voice pitch, mitha veppam and increased sweating.Majority of cases affected are having dark complexion.(Vatha humour) . 40% of cases had fair/white complexion(Kaba humour).Increased sweating is a sign of Kaba derangement.No specific inference could be made from vizhi examination. In Healthy volunteers, no specific inference could be made out in this study from the examination of Niram, Mozhi and Meikuri.

Almost all the cases had the character of normal stools. No specific inference could be made from Malam (Stool) examination..

Almost all the cases and healthy volunteers had normal urine colour (Ila Manjal Niram) with mild aromatic smell and normal density and normal Enjal. No specific inference could be made out in this study from the examination of Neerkuri.

Majority of cases had pearl bead Neikkuri and Fastly spreading nature.As per the text, the disease is caused due to derangement in VathaKabam. Thus it is evident that VathaKaba humour is affected in Kaakkai vali, hence majority of patients had pearl bead shape neikkuri and fastly spreading nature which is validated from the literature.

Majority of the cases had deranged Saaram, Oon,Kozhuppu ,Enbu,Moolai and Sukilam.

Majority of cases(65%) had Vatha Kabam naadi .As per the text, Kaakkai vali which is caused due to VathaKaba humour which is validated. In healthy volunteers, Naadi was observed to be in physiological state in most of them with respect to body nature, sex and age

Among the 20 cases,all cases had Periodic episodes of Seizures,80% cases had history of faecal incontinence,80%cases had urinary incontinence,60% cases had Epileptic aura,65% cases had hypertonicity of the limbs,60% cases had history of confused state and 45% cases had dryness of the tongue.

From the wrist circumferic sign study,majority of patients(70%) had 8 1/4 manikkadai alavu.

In the 20 cases regarding Dasa vaayu, majority of them had derangement in Abanan, Viyaanan, Udhanan, Samanan, Naagan, Koorman and Kirukaran. Abanan was affected in 15 (75%) cases, had incontinence of motion and urine. Viyanan was affected in 20 (75%) cases had Convulsions, Uthanan was affected in 15 (75%) cases had impaired consciousness. . Samanan was affected in 15 (75%) cases .Naagan was affected in 15 (75%) cases had loss of consciousness during convulsion. Koorman was affected in 15 (75%) cases results in increased lacrimation. Kirugaran was affected in 5 (12.5 %) cases results in excessive salivation.

From the study on five types of Pittam, the components of Pitham connected with vision and life energy (daily routine activities) are found to be affected. Sathaga pitham was affected in 20 cases (100%) had impaired consciousness Alosagam gets affected in 15 cases (50%) had unable to see and know the objects around the patients during convulsion. The daily routines are greatly affected in Kaakkai vali cases due to deranged Vatham and Kabam humours. No specific inference could be made from derangements in Pitha humour.

From the study on five types of Kabam, the components of Kabam connected with respiration and joint movements are found to be affected. Avalambagam was affected in 12 (60%) cases had cough. Santhigam was affected in 4 cases (20%) had joint pain

From the study, all the signs and symptoms mentioned in Agathiyar Vaithiya Kaandam literature about Kaakkai vali are found in the cases of Grandmal Epilepsy consistently, therefore the diagnosis Kaakkai vali may be considered equivalent to that of the '**Kaakkai vali**' mentioned in the Agathiyar Vaithiya Kaandam literature.

In EEG study Some of the patients had normal study whereas in some of the patients, there may be generalised epileptiform activity i.e Grandmal Epilepsy.

CONCLUSION

The study was aimed at investigating into the details of the symptoms given under Kaakkai vali and to define Siddha diagnostic methods and prognosis of Kaakkai vali. The author concludes the study on Kaakkai vali with valuable results validating the Symptomatology and Siddha diagnostic methodology.

Mental stress is said to be an important factor precipitating the disease. Vatha and Kaba humour get deranged by emotional stress. In this study also all patients were having mental agony prior to onset of disease. So Yoga and meditation can be advised along with medicines for the disease,

Clinically the disease is manifested with symptoms like Periodic Episodes of Seizures, Hypertonicity of the limbs, Epileptic aura, History of Urinary incontinence, History of faecal incontinence and dryness of the tongue. Surprisingly, it was found that the symptoms presented by the patients in the study were those of a constant subset of symptoms of Grandmal Epilepsy explained in the present day classification

In Neerkkuri Examination it was found that many cases of Kaakkai vali had fastly spreading and pearl bearded shape. So Neerkkuri can be taken as one of the significant diagnostic tool for diagnosing this disease.

From the pulse study, it was evident that majority of cases (65%) had Vatha Kabam naadi which can be taken as one of the significant diagnostic tool for diagnosing this disease.

In the study of tongue, majority of cases some had Pulipu (sour taste) & Inippu suvai (sweet taste) lingering in tongue and increased salivation. As per the text Agathiar Naadi, Pulipu taste (sour taste) in tongue is a sign of Vatha derangement and Inippu taste (sweet taste) in tongue is a sign of deranged Kaba humour. So it may be inferred that deranged Vatha and Kaba humour forms the base for Kaakai vali which can be taken as one of the significant diagnostic tool for diagnosing this disease.

From the study, it was evident that majority of them had derangement in Abanan, Viyaanan, Udhanan, Samanan, Naagan, Koorman And Kirukaran. The components of Kabam connected with respiration and joint movements are mostly affected.

Regarding Udal thathukal, almost all thathus (except Seneer) are affected. So drugs that strengthen the Udal thathukkal should be prescribed.

Mannikkadai nool findings were also conforming to the range 8 - 8 ¼ which according to Agathiyar Soodamani kayaru soothiram indicates the chances of acquiring diseases of head.

Remarkable variations were observed in both Siddha and Modern parameters from the analysis done between Kaakkai vali cases and Control group.

Finally with the results and observation of various Siddha parameters, it was found that the disease Kaakkai vali is caused due to vitiation of Vatha and Kaba humours.

Thus this study has validated the symptomatology elucidated by Sage Agathiyar and matched it with that of a disease – Grandmal Epilepsy. So the author concludes that these Siddha diagnostic parameters can be successfully used by a physician at the clinical desk in the diagnosis of Kaakkai vali.

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ASSESSMENT FORMS

Form –I Screening and selection Proforma

Form –IA History Proforma on enrollment

Form II Clinical Assessment on enrollment

Form –III Laboratory investigations on enrollment,
during the study

Form –IV Consent form
(Vernacular and English versions)

Form -IV- A Patient Information Sheet
(Vernacular and English versions)

ANNEXURE I
NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47.
DEPARTMENT OF NOI NAADAL.
A STUDY ON DIAGNOSTIC METHODOLOGY AND
SYMPTOMATOLOGY OF “KAAKKAI VALI ”
FORM I
SCREENING AND SELECTION PROFORMA

1. O.P.No _____ 2. I.P No _____ 3. Bed No: _____ 4. S.No: _____

5. Name: _____ 6. Age (years): 7. Gender: M ☐ F ☐

8. Occupation: _____ 9. Income: _____

10. Address:

11. Contact Nos: -----

12. E-mail : -----

INCLUSION CRITERIA

	YES	NO
1. Age 18-55yrs both sex	<input type="checkbox"/>	<input type="checkbox"/>
2.Compliants of periodic Episodes of Seizures	<input type="checkbox"/>	<input type="checkbox"/>
3.Epileptic aura	<input type="checkbox"/>	<input type="checkbox"/>
4. Dryness of the tongue.	<input type="checkbox"/>	<input type="checkbox"/>
5. Hypertonicity of the limbs.	<input type="checkbox"/>	<input type="checkbox"/>
6. History of Confused state.	<input type="checkbox"/>	<input type="checkbox"/>
7.. History of Faecal incontinence	<input type="checkbox"/>	<input type="checkbox"/>
8. History of Urinary incontinence	<input type="checkbox"/>	<input type="checkbox"/>

Patients who fulfill any of the four criteria are included to the study

EXCLUSION CRITERIA

1. Major systemic illness	<input type="checkbox"/>	<input type="checkbox"/>
2. History of Head Injury	<input type="checkbox"/>	<input type="checkbox"/>
3. Eclampsia	<input type="checkbox"/>	<input type="checkbox"/>
4. Endocrinal diseases	<input type="checkbox"/>	<input type="checkbox"/>
5. Vulnerable group	<input type="checkbox"/>	<input type="checkbox"/>

Date :

Investigator

Lecturer

ANNEXURE II
NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47.
DEPARTMENT OF NOI NAADAL
A STUDY ON DIAGNOSTIC METHODOLOGY AND
SYMPTOMATOLOGY OF “KAAKKAI VALI”
FORM I-A
HISTORY PROFORMA

1. Sl.No of the case: _____

2. Name: _____ Height: _____ cms Weight: _____ Kg

3. Age (years): _____ DOB

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--	--

--	--	--	--

D D M M Y E A R

4. Educational Status:

1) Illiterate ☐ 2) Literate ☐ 3) Student ☐ 4) Graduate/Postgraduate ☐

5. Nature of work:

1) Sedentary work ☐

2) Field work with physical labour ☐

3) Field work Executive ☐

6. Complaints and Duration:

7. History of present illness:

8. History of Past illness:

	1. Yes	2. No
Systemic hypertension	<input type="checkbox"/>	<input type="checkbox"/>
Ischemic heart disease	<input type="checkbox"/>	<input type="checkbox"/>
Dyslipidaemia	<input type="checkbox"/>	<input type="checkbox"/>
Jaundice	<input type="checkbox"/>	<input type="checkbox"/>
Bronchial asthma	<input type="checkbox"/>	<input type="checkbox"/>
Any drug allergy	<input type="checkbox"/>	<input type="checkbox"/>
Any surgeries	<input type="checkbox"/>	<input type="checkbox"/>
Any other trauma or injury in the skull	<input type="checkbox"/>	<input type="checkbox"/>

9. Habits :

	1. Yes	2. No
Smoker	<input type="checkbox"/>	<input type="checkbox"/>
Alcoholic	<input type="checkbox"/>	<input type="checkbox"/>
Drug Addiction	<input type="checkbox"/>	<input type="checkbox"/>
Betel nut chewer:	<input type="checkbox"/>	<input type="checkbox"/>
Tea	<input type="checkbox"/>	<input type="checkbox"/>
Coffee	<input type="checkbox"/>	<input type="checkbox"/>
Milk	<input type="checkbox"/>	<input type="checkbox"/>

Type of diet V ☐ NV ☐ ☐

10. Personal history:

Marital status: Married ☐ Unmarried ☐

No. of children: Male: _____ Female: _____

11. Family history:

12. Menstrual & Obstetric history:

Age at menarche _____ years

Gravidity ☐ Parity ☐

Duration of the menstrual cycle (days).....

Constancy of cycle duration: 1.Regular ☐ 2.Irregular ☐

7. GENERAL ETIOLOGY FOR KAAKKAI VALI :

	YES	NO
1. Intake of Animal foods	<input type="checkbox"/>	<input type="checkbox"/>
2. Lustful desire	<input type="checkbox"/>	<input type="checkbox"/>
3. Intake of tubers	<input type="checkbox"/>	<input type="checkbox"/>
4. Intake of millet gruels	<input type="checkbox"/>	<input type="checkbox"/>
5. Felling trees	<input type="checkbox"/>	<input type="checkbox"/>
6. Improper payments to labourers	<input type="checkbox"/>	<input type="checkbox"/>
7. Reproaching mentors	<input type="checkbox"/>	<input type="checkbox"/>

8. CLINICAL SYMPTOMS OF KAAKKAI VALI:

- | | | |
|------------------------------------|--------------------------|--------------------------|
| 1. Age 18-55yrs both sex | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Periodic Episodes of Seizures | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Epileptic aura | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Dryness of the tongue. | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Hypertonicity of the limbs. | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. History of Confused state. | <input type="checkbox"/> | <input type="checkbox"/> |
| 7.. History of Faecal incontinence | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. History of Urinary incontinence | <input type="checkbox"/> | <input type="checkbox"/> |

Date :

Investigator

Lecturer

ANNEXURE III
NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47
DEPARTMENT OF NOI NAADAL.
A STUDY ON DIAGNOSTIC METHODOLOGY AND
SYMPTOMATOLOGY OF “KAAKKAI VALI”
FORM II
CLINICAL ASSESSMENT

1. Serial No: _____

2. Name: _____

3. Date of birth:

D D M M Y E A R

4. Age: _____ years

5. Date: _____

GENERAL EXAMINATION:

1. Height: _____ cms. BMI _____ (Weight Kg/ Height m²)

2..Weight (kg):

3. Temperature (°F):

4. Pulse rate:

5. Heart rate:

6. Respiratory rate:

7. Blood pressure:

8. Pallor:

9. Jaundice:

10. Cyanosis:

11. Lymphadenopathy:

12. Pedal edema:

13. Clubbing:

14. Jugular vein pulsation:

VITAL ORGANS EXAMINATION

	1. Normal	2. Affected	
1. Heart	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Lungs	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Brain	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Liver	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Kidney	<input type="checkbox"/>	<input type="checkbox"/>	_____
6. Spleen	<input type="checkbox"/>	<input type="checkbox"/>	_____
7. Stomach	<input type="checkbox"/>	<input type="checkbox"/>	_____

SYSTEMIC EXAMINATION:

1. Cardio Vascular System	_____
2. Respiratory System	_____
3. Gastrointestinal System	_____
4. Central Nervous System	_____
5. Uro genital System	_____
6. Endocrine System	_____

SIDDHA SYSTEM OF EXAMINATION

[1] ENVAGAI THERVU [EIGHT-FOLD EXAMINATION]

I. NAADI (KAI KURI) (RADIAL PULSE READING)

(a) Naadi Nithanam (Pulse Appraisal)

1. Kalam (Pulse reading season)

1. Kaarkaalam ☐
(Rainy season)

2. Koothirkaalam ☐
(Autumn)

3. Munpanikaalam ☐
(Early winter)

4. Pinpanikaalam ☐
(Late winter)

5. Ilavenirkaalam ☐
(Early summer)

6. Muthuvenirkaalam ☐
(Late summer)

2. Desam (Climate of the patient's habitat)

1. Kulir ☐
(Temperate)

2. Veppam ☐
(Hot)

3. Vayathu (Age) 1. 1-33yrs ☐ 2. 34-66yrs ☐ 3. 67-100 ☐

4. Udal Vanmai (General body condition)

1. Iyyalbu ☐
(Normal built)

2. Valivu ☐
(Robust)

3. Melivu ☐
(Lean)

5. Vanmai (Expansile Nature)

1. Vanmai ☐

2. Menmai ☐

6. Panbu (Habit)

1. Thannadai ☐
(Playing in)

2. Puranadai ☐
(Playing out)

3. Illaitthal ☐
(Feeble)

4. Kathithal ☐
(Swelling)

5. Kuthithal ☐
(Jumping)

6. Thullal ☐
(Frisking)

7. Azhutthal ☐
(ducking)

8. Padutthal ☐
(Lying)

9. Kalatthal ☐
(Blending)

10. Munnokku ☐
(Advancing)

11. Pinnokku ☐
(Flinching)

12. Suzhalal ☐
(Revolving)

13. Pakkamnokku ☐
(Swerving)

(b) Naadi nadai (Pulse Play)

1. Vali ☐ 2. Azhal ☐ 3. Iyyam ☐

4. Vali Azhal ☐ 5. Azhal Vali ☐ 6. Iyya Vali ☐

7. Vali Iyyam ☐ 8. Azhal Iyyam ☐ 9. Iyya Azhal ☐

II. NAA (TONGUE)

1. Maa Padinithiruthal ☐ 1. Present ☐ 2. Absent ☐
(Coatedness)

2. Niram ☐ 1. Karuppu ☐ 2. Manjal ☐ 3. Velluppu ☐
(Colour) (Dark) (Yellow) (Pale)

3. Suvai ☐ 1. Pulippu ☐ 2. Kaippu ☐ 3. Inippu ☐
(Taste sensation) (Sour) (Bitter) (Sweet)

4. Vedippu 1. Absent ☐ 2. Present ☐
(Fissure)

5. Vai neer oorai 1. Normal ☐ 2. Increased ☐ 3. Reduced ☐
(Salivation)

III. NIRAM (COMPLEXION)

1. Karuppu ☐ 2. Manjal ☐ 3. Velluppu ☐
(Dark) (Yellowish) (Fair)

IV. MOZHI (VOICE)

1. Sama oli ☐ 2. Urattha oli ☐ 3. Thazhantha oli ☐
(Medium pitched) (High pitched) (Low pitched)

V. VIZHI (EYES)

1. Niram (Venvizhi)
(Discolouration)

1. Karuppu ☐ 2. Manjal ☐
(Dark) (Yellow)

3. Sivappu ☐ 4. Velluppu ☐
(Red) (White)

5. No Discoloration ☐

2. Kanneer 1. Normal ☐ 2. Increased ☐ 3. Reduced ☐
(Tears)

3. Erichchal 1. Present ☐ 2. Absent ☐
(Burning sensation)

4. Peelai seruthal 1. Present ☐ 2. Absent ☐
(Mucus excrements)

VI. MEI KURI (PHYSICAL SIGNS)

- | | | | |
|-------------------------------|--|--|--|
| 1. Veppam
(Warmth) | 1. Mitham <input type="checkbox"/>
(Mild) | 2. Migu <input type="checkbox"/>
(Moderate) | 3. Thatpam <input type="checkbox"/>
(Low) |
| 2. Viyarvai
(Sweat) | 1. Increased <input type="checkbox"/> | 2. Normal <input type="checkbox"/> | 3. Reduced <input type="checkbox"/> |
| 3. Thodu vali
(Tenderness) | 1. Absent <input type="checkbox"/> | 2. Present <input type="checkbox"/> | |

VII. MALAM (STOOLS)

- | | | |
|--|--|---|
| 1. Niram
(Color) | 1. Karuppu <input type="checkbox"/>
(Dark) | 2. Manjal <input type="checkbox"/>
(Yellowish) |
| | 3. Sivappu <input type="checkbox"/>
(Reddish) | 4. Velluppu <input type="checkbox"/>
(Pale) |
| 2. Sikkal
(Constipation) | 1. Present <input type="checkbox"/> | 2. Absent <input type="checkbox"/> |
| 3. Sirutthal
(Poorly formed stools) | 1. Present <input type="checkbox"/> | 2. Absent <input type="checkbox"/> |
| 4. Kalichchal
(Loose watery stools) | 1. Present <input type="checkbox"/> | 2. Absent <input type="checkbox"/> |
| 5. Seetham
(Watery and mucoid excrements) | 1. Present <input type="checkbox"/> | 2. Absent <input type="checkbox"/> |
| 6. Vemmai
(Warmth) | 1. Present <input type="checkbox"/> | 2. Absent <input type="checkbox"/> |

7. History of habitual constipation 1. Present ☐ 2. Absent ☐

8. Passing of a) Mucous 1. Yes ☐ 2. No ☐

 b) Blood 1. Yes ☐ 2. No ☐

VIII. MOOTHIRAM (URINE)

(a) NEER KURI (PHYSICAL CHARACTERISTICS)

1. Niram (colour)

Colourless ☐ Milky purulent ☐ orange ☐

Red ☐ Greenish ☐ dark brown ☐

Bright red ☐ Black ☐ Brown red or yellow ☐

2. Manam (odour)

Yes No

Ammonical ☐ : ☐

Fruity ☐ : ☐

Others : _____

3. Edai (Specific gravity)

Yes No

Normal (1.010-1.025) ☐ ☐

High Specific gravity (>1.025) : ☐ ☐

Low Specific gravity (<1.010) : ☐ ☐

Low and fixed Specific gravity (1.010-1.012): ☐ ☐

4. Alavu(volume)

Yes

No

Normal (1.2-1.5 lt/day)

:

☐☐

Polyuria (>2lt/day)

:

☐☐

Oliguria (<500ml/day)

☐☐**5. Nurai(froth)**

Yes

No

Clear

:

☐☐

Cloudy :

☐☐**6.Enjal (deposits)**

Yes

No

☐☐**(b) NEI KURI (oil spreading sign)**

1. Aravam

☐

2. Mothiram

☐

(Serpentine fashion)

(Ring)

3. Muthu

☐

4. Aravil Mothiram

☐

(Pearl beaded appear)

(Serpentine in ring fashion)

5. Aravil Muthu

☐

6. Mothirathil Muthu

☐

(Serpentine and Pearl patterns)

(Ring in pearl fashion)

7. Mothirathil Aravam

☐

8. Muthil Aravam

☐

(Ring in Serpentine fashion)

(Pearl in Serpentine fashion)

9. Muthil Mothiram

☐

10. Asathiyam

☐

(Pearl in ring fashion)

(Incurable)

11. Mellena paraval

☐

12.others:_____

(Slow spreading)

[2]. **MANIKADAI NOOL** (Wrist circummetric sign) : _____ fbs

[3]. **IYMPORIGAL /IYMPULANGAL**

(Penta sensors and its modalities)

	1. Normal	2. Affected
1. Mei (skin)	<input type="checkbox"/>	<input type="checkbox"/>
2. Vaai (Mouth/ Tongue)	<input type="checkbox"/>	<input type="checkbox"/>
3. Kan (Eyes)	<input type="checkbox"/>	<input type="checkbox"/>
4. Mookku (Nose)	<input type="checkbox"/>	<input type="checkbox"/>
5. Sevi (Ears)	<input type="checkbox"/>	<input type="checkbox"/>

[4]. **KANMENTHIRIYANGAL /KANMAVIDAYANGAL**

(Motor machinery and its execution)

	1. Normal	2. Affected
1. Kai(Hands)	<input type="checkbox"/>	<input type="checkbox"/>
2. Kaal (Legs)	<input type="checkbox"/>	<input type="checkbox"/>
3. Vaai (Mouth)	<input type="checkbox"/>	<input type="checkbox"/>
4. Eruvai (Analepy)	<input type="checkbox"/>	<input type="checkbox"/>
5.Karuvaai (Birth canal)	<input type="checkbox"/>	<input type="checkbox"/>

[5]. YAKKAI (SOMATIC TYPES)

Vatha constitution	Pitha constitution	Kaba constitution
Lean and lanky built <input type="checkbox"/>	Thin covering of bones and joints <input type="checkbox"/>	Plumpy joints and limbs <input type="checkbox"/>
Hefty proximities of limbs <input type="checkbox"/>	by soft tissue	Broad forehead and chest <input type="checkbox"/>
Cracking sound of joints on walking <input type="checkbox"/>	Always found with warmth, sweating <input type="checkbox"/>	Sparkling eyes with clear sight <input type="checkbox"/>
Dark and thicker eye lashes <input type="checkbox"/>	and offensive body odour	Lolling walk <input type="checkbox"/>
Dark and light admixed complexion <input type="checkbox"/>	Wrinkles in the skin <input type="checkbox"/>	Immense strength despite poor eating <input type="checkbox"/>
Split hair <input type="checkbox"/>	Red and yellow admixed complexion <input type="checkbox"/>	High tolerance to hunger, thirst and fear <input type="checkbox"/>
Clear words <input type="checkbox"/>	Easily suffusing eyes due to heat and alcohol <input type="checkbox"/>	Exemplary character with good memory power <input type="checkbox"/>
Scant appetite for cold food items <input type="checkbox"/>	Sparse hair with greying <input type="checkbox"/>	More liking for sweet taste <input type="checkbox"/>
Poor strength despite much eating <input type="checkbox"/>	Intolerance to hunger, thirst and heat <input type="checkbox"/>	Husky voice <input type="checkbox"/>
Loss of libido <input type="checkbox"/>	Inclination towards perfumes like sandal <input type="checkbox"/>	
In generosity <input type="checkbox"/>	Slender eye lashes <input type="checkbox"/>	
Sleeping with eyes half closed <input type="checkbox"/>	Pimples and moles are plenty <input type="checkbox"/>	

RESULTANT SOMATIC TYPE: _____

[6] GUNAM

1. Sathuva Gunam ☐

2. Rajo Gunam ☐

3. Thamo Gunam ☐

[7] UYIR THATHUKKAL

A. VALI

	1. Normal	2. Affected
1. Praanan (Heart centre)	<input type="checkbox"/>	<input type="checkbox"/>
2. Abaanan (Matedial of muladhar centre)	<input type="checkbox"/>	<input type="checkbox"/>
3. Samaanan (Navel centre)	<input type="checkbox"/>	<input type="checkbox"/>
4. Udhaanan (Forehead centre)	<input type="checkbox"/>	<input type="checkbox"/>
5. Viyaanan (Throat centre)	<input type="checkbox"/>	<input type="checkbox"/>
6. Naahan (Higher intellectual function)	<input type="checkbox"/>	<input type="checkbox"/>
7. Koorman (Air of yawning)	<input type="checkbox"/>	<input type="checkbox"/>
8. Kirukaran (Air of salivation)	<input type="checkbox"/>	<input type="checkbox"/>
9. Devathathan (Air of laziness)	<input type="checkbox"/>	<input type="checkbox"/>
10. Dhananjeyan (Air that acts on death)	<input type="checkbox"/>	<input type="checkbox"/>

B. AZHAL

	1. Normal	2. Affected
1. Anala pittham (Gastric juice)	<input type="checkbox"/>	<input type="checkbox"/>
2. Prasaka pittham (Bile)	<input type="checkbox"/>	<input type="checkbox"/>
3. Ranjaka pittham (Haemoglobin)	<input type="checkbox"/>	<input type="checkbox"/>
4. Aalosaka pittham (Aqueous Humour)	<input type="checkbox"/>	<input type="checkbox"/>
5. Saathaka pittham (Life energy)	<input type="checkbox"/>	<input type="checkbox"/>

C. IYYAM

	1. Normal	2. Affected
1. Avalambagam (Serum)	<input type="checkbox"/>	<input type="checkbox"/>
2. Kilethagam (saliva)	<input type="checkbox"/>	<input type="checkbox"/>
3. Pothagam (lymph)	<input type="checkbox"/>	<input type="checkbox"/>
4. Tharpagam (cerebrospinal fluid)	<input type="checkbox"/>	<input type="checkbox"/>
5. Santhigam (Synovial fluid)	<input type="checkbox"/>	<input type="checkbox"/>

8] UDAL THATHUKKAL

INCREASED SAARAM (CHYLE)	DECREASED SAARAM(CHYLE)
Loss of appetite <input type="checkbox"/>	Loss weight <input type="checkbox"/>
Excessive salivation <input type="checkbox"/>	Tiredness <input type="checkbox"/>
Loss of perseverance <input type="checkbox"/>	Dryness of the skin <input type="checkbox"/>
Excessive heaviness <input type="checkbox"/>	Diminished activity of the
White musculature <input type="checkbox"/>	sense organs <input type="checkbox"/>
Cough, dyspnea, excessive sleep <input type="checkbox"/>	
Weakness in all joints of the body <input type="checkbox"/>	

A. SAARAM: INCREASED ☐ DECREASED ☐

INCREASED CENNEER(BLOOD)	DECREASED CENNEER(BLOOD)
Boils in different parts of the <input type="checkbox"/>	Anemia <input type="checkbox"/>
Anorexia <input type="checkbox"/>	Tiredness <input type="checkbox"/>
Mental disorder <input type="checkbox"/>	Neuritis <input type="checkbox"/>
Splenomegaly <input type="checkbox"/>	Lassitude <input type="checkbox"/>
Colic pain <input type="checkbox"/>	Pallor of the body <input type="checkbox"/>

Increased pressure	<input type="checkbox"/>	
Reddish eye and skin	<input type="checkbox"/>	
Jaundice	<input type="checkbox"/>	
Haematuria	<input type="checkbox"/>	

B. CENNEER: INCREASED ☐ DECREASED ☐

INCREASED OON (MUSLE)	DECREASED OON (MUSLE)
Cervical lymphadenitis <input type="checkbox"/>	Impairment of sense organs <input type="checkbox"/>
Vernical ulcer <input type="checkbox"/>	Joint pain <input type="checkbox"/>
Tumour in face ,abdomen <input type="checkbox"/> thigh, genitalia	Jaw, thigh and genitalia gets shortened <input type="checkbox"/>
Hyper muscular in the cervical region <input type="checkbox"/>	

C. OON: INCREASED ☐ DECREASED ☐

INCREASED KOZHUPPU (ADIPOSE TISSUE)	DECREASED KOZHUPPU (ADIPOSE TISSUE)
Cervical lymph adenitis <input type="checkbox"/>	Pain in the hip region <input type="checkbox"/>
Vernical ulcer <input type="checkbox"/>	Disease of the spleen <input type="checkbox"/>
Tumour in face, abdomen, thigh, genitalia <input type="checkbox"/>	
Hyper muscular in the cervical region <input type="checkbox"/>	
Dyspnoea <input type="checkbox"/>	
Loss of activity <input type="checkbox"/>	

D. KOZHUPPU: INCREASED ☐ DECREASED ☐

INCREASED ENBU (BONE)	DECREASED ENBU (BONE)
Growth in bones and teeth <input type="checkbox"/>	Bones diseases <input type="checkbox"/>
	Loosening of teeth <input type="checkbox"/>
	Nails splitting <input type="checkbox"/>
	Falling of hair <input type="checkbox"/>

E. ENBU: INCREASED ☐ DECREASED ☐

INCREASED MOOLAI (BONE MARROW)	DECREASED MOOLAI (BONE MARROW)
Heaviness of the body <input type="checkbox"/> Swollen eyes <input type="checkbox"/> Swollen phalanges chubby fingers <input type="checkbox"/> Oliguria <input type="checkbox"/> Non healing ulcer <input type="checkbox"/>	Osteoporosis <input type="checkbox"/> Sunken eyes <input type="checkbox"/>

F. MOOLAI: INCREASED ☐ DECREASED ☐

INCREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)	DECREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)
Infatuation and lust towards women / men <input type="checkbox"/> Urinary calculi <input type="checkbox"/>	Failure in reproduction <input type="checkbox"/> Pain in the genitalia <input type="checkbox"/>

G. SUKKILAM/SURONITHAM: INCREASED ☐ DECREASED ☐

[9] MUKKUTRA MIGU GUNAM

I. Vali Migu Gunam	1. Present	2. Absent
1. Emaciation	<input type="checkbox"/>	<input type="checkbox"/>
2. Complexion – blackish	<input type="checkbox"/>	<input type="checkbox"/>
3. Desire to take hot food	<input type="checkbox"/>	<input type="checkbox"/>
4. Shivering of body	<input type="checkbox"/>	<input type="checkbox"/>
5. Abdominal distension	<input type="checkbox"/>	<input type="checkbox"/>
6. Constipation	<input type="checkbox"/>	<input type="checkbox"/>
7. Insomnia	<input type="checkbox"/>	<input type="checkbox"/>
8. Weakness	<input type="checkbox"/>	<input type="checkbox"/>
9. Defect of sense organs	<input type="checkbox"/>	<input type="checkbox"/>
10. Giddiness	<input type="checkbox"/>	<input type="checkbox"/>
11. Lack of interest	<input type="checkbox"/>	<input type="checkbox"/>

II. Pitham Migu Gunam**1. Present****2. Absent**

- | | | |
|--|--------------------------|--------------------------|
| 1. Yellowish discolouration of skin | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Yellowish discolouration of the eye | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Yellow coloured urine | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Yellowishness of faeces | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Increased appetite | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Increased thirst | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Burning sensation over the body | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Sleep disturbance | <input type="checkbox"/> | <input type="checkbox"/> |

III. Kapham migu gunam**1. Present****2. Absent**

- | | | |
|----------------------------------|--------------------------|--------------------------|
| 1. Increased salivary secretion | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Reduced activeness | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Heaviness of the body | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Body colour – fair complexion | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Chillness of the body | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Reduced appetite | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Eraippu | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Increased sleep | <input type="checkbox"/> | <input type="checkbox"/> |

[10]. **NOIUTRA KALAM**

1. Kaarkaalam ☐
(Aug15-Oct14)

2. Koothirkaalam ☐
(Oct15-Dec14)

3. Munpanikaalam ☐
(Dec15-Feb14)

4. Pinpanikaalam ☐
(Feb15-Apr14)

5. Ilavanirkaalam ☐
(Apr15-June14)

6. Muthuvenirkaalam ☐
(June15-Aug14)

[11]. **NOI UTRA NILAM**

1. Kurunji ☐
(Hilly terrain)

2. Mullai ☐
(Forest range)

3. Marutham ☐
(Plains)

4. Neithal ☐
(Coastal belt)

5. Paalai ☐
(Desert)

[12]. Date of Birth

[13]. Time of Birth AM PM

[14]. Place of Birth: _____

[15]. **Rasi (Zodiac Sign)**

- | | | | | | |
|-------------|--------------------------|---------------|--------------------------|-------------|--------------------------|
| 1. Mesam | <input type="checkbox"/> | 2. Rishabam | <input type="checkbox"/> | 3. Midhunam | <input type="checkbox"/> |
| 4. Katakam | <input type="checkbox"/> | 5. Simmam | <input type="checkbox"/> | 6. Kanni | <input type="checkbox"/> |
| 7. Thulam | <input type="checkbox"/> | 8. Viruchiham | <input type="checkbox"/> | 9. Dhanusu | <input type="checkbox"/> |
| 10. Maharam | <input type="checkbox"/> | 11. Kumbam | <input type="checkbox"/> | 12. Meenam | <input type="checkbox"/> |

[16]. **Natchathiram (birth stars):**

- | | | | | | |
|-----------------|--------------------------|-------------------|--------------------------|------------------|--------------------------|
| 1. Aswini | <input type="checkbox"/> | 2. Barani | <input type="checkbox"/> | 3. Karthikai | <input type="checkbox"/> |
| 4. Rohini | <input type="checkbox"/> | 5. Mirugaseeradam | <input type="checkbox"/> | 6. Thiruvathirai | <input type="checkbox"/> |
| 7. Punarpoosam | <input type="checkbox"/> | 8. Poosam | <input type="checkbox"/> | 9. Ayilyam | <input type="checkbox"/> |
| 10. Makam | <input type="checkbox"/> | 11. Pooram | <input type="checkbox"/> | 12. Utthiram | <input type="checkbox"/> |
| 13. Astham | <input type="checkbox"/> | 14. Chithirai | <input type="checkbox"/> | 15. Swathi | <input type="checkbox"/> |
| 16. Visakam | <input type="checkbox"/> | 17. Anusam | <input type="checkbox"/> | 18. Kettai | <input type="checkbox"/> |
| 19. Moolam | <input type="checkbox"/> | 20. Pooradam | <input type="checkbox"/> | 21. Uthiradam | <input type="checkbox"/> |
| 22. Thiruvonam | <input type="checkbox"/> | 23. Avittam | <input type="checkbox"/> | 24. Sadayam | <input type="checkbox"/> |
| 25. Poorattathi | <input type="checkbox"/> | 26. Uthirattathi | <input type="checkbox"/> | 27. Revathi | <input type="checkbox"/> |
| 28. Not Known | <input type="checkbox"/> | | | | |

Date :

Investigator

Lecturer

ANNEXURE IV

**NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47
DEPARTMENT OF NOI NAADAL**

**A STUDY ON DIAGNOSTIC METHODOLOGY AND
SYMPTOMATOLOGY OF “KAKKAI VALI”**

FORM-III

LABORATORY INVESTIGATIONS

1. O.P No: _____ Lab.No _____ Serial No _____
2. Name: _____
3. Date of birth :

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D D M M Y E A R
4. Age : _____ years
5. Date of assessment: _____

Urine Examination

6. Sugar: Fasting _____
Post prandial _____
Random _____
7. Albumin _____
8. Deposits _____
9. Bile salts _____
10. Bile pigments _____
11. Urobilinogen _____

Blood

9. Hb _____ gms%
10. TRBC _____ Cells/cu mm

11.DC
P____% L ____% E ____% M ____% B____%

12.ESR At 30 minutes _____ mm At 60 minutes _____mm

13.TRBC _____ Cells/cu mm

14.Blood Sugar-® _____mgs%

Fasting _____mgs%

Post prandial _____mgs%

15. Serum Total Cholesterol _____mgs %

16. HDL _____ mgs%

17. LDL _____mgs%

18. Triglycerides _____mgs%

19. Blood Urea _____mgs%

20. Serum Creatinine _____mgs%

21. Serum Total bilirubin_____mgs%

22.Serum Direct Bilirubin_____mgs%

23.Serum Indirect Bilirubin_____mgs%

24. SGOT_____mgs%

25.SGPT _____mgs%

26.Serum Alkaline Phosphatase_____mgs%

27.Serum Total Protein_____mgs%

28.Serum Albumin_____mgs%

29.Serum Globulin_____mgs%

30.Serum Calcium _____mgs%

31.Serum Phosphorous_____mgs%

32.Serum Uric acid_____mgs%

MOTION EXAMINATION

33.Ova

34.Cyst

35.Occult Blood

SPECIFIC INVESTGATIONS

Electro Encephalo Gram [EEG] :

:

Date:

Signature of theDoctor:

ANNEXURE - V
DEPARTMENT OF NOI NAADAL
NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47.
A STUDY ON DIAGNOSTIC METHODOLOGY AND
SYMPTOMATOLOGY OF“KAAKKAI VALI”
REGISTRATION NO: 32103203 (2011-2013)

FORM IV - INFORMED WRITTEN CONSENT FORM

Iexercising my free power of choice, hereby give my consent to be included as a subject in the diagnostic trial entitled “ A study on **KAAKKAI VALI** ”. I may be asked to give urine and blood samples during the study.

I have been informed about the study to my satisfaction by the attending investigator about the purpose of this trial, the nature of study and the laboratory investigations. I also give my consent to publish my study results in scientific conferences and reputed scientific journals for the betterment of clinical research.

I am also aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

Signature /thumb impression of the patient :

Date :

Name of the patient :

Signature of the investigator :

Date :

Head of the Department :

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை-47.

நோய் நாடல் துறை

"காக்கை வலி"- நோய் கணிப்பு முறை மற்றும் குறிகுணங்களை பற்றிய ஓர்
ஆய்வு"

பதிவு எண்-32103203(2011-2013)

ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் - ந்த ஆய்வை குறித்த அனைத்து விபரங்களையும்
நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி :

கையொப்பம் :

- டம்:

பெயர் :

நோயாளியின் ஒப்புதல்

நான், _____ என்னுடைய சுதந்திரமாக
தேர்வு செய்யும் உரிமையைக் கொண்டு - ந்கு தலைப்பிடப்பட்ட "காக்கை
வலி"- நோயை கணிப்பதற்கான மருத்துவ ஆய்விற்கு என்னை உட்படுத்த
ஒப்புதல் அளிக்கிறேன்.

என்னிடம் - ந்தமருத்துவ ஆய்வின் காரணத்தையும், மருத்துவ
ஆய்வுக்கூட பரிசோதனைகள் பற்றி திருப்தி அளிக்கும் வகையில் ஆய்வு
மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் - ந்த மருத்துவ ஆய்வின் போது காரணம் எதுவும் கூறாமல்,
எப்பொழுது வேண்டுமானாலும் - ந்த ஆய்விலிருந்து என்னை விடுவித்து
கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன்.

தேதி:

- டம்:

கையொப்பம் :

பெயர் :

தேதி :

சாட்சிக்காரர் கையொப்பம்:

- டம்:

பெயர் :

உறவுமுறை:

ANNEXURE – VI
DEPARTMENT OF NOI NAADAL
NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47.
A STUDY ON DIAGNOSTIC METHODOLOGY AND
SYMPTOMATOLOGY OF “KAAKKAI VALI”
FORM IV- A - PATIENT INFORMATION SHEET

PURPOSE OF RESEARCH AND BENEFITS:

The diagnostic research study in which your participation is proposed to assess the diagnostic methods in Siddha methodology in “**KAAKKAI VALI**” patients. Knowledge gained from this study would be of benefit to patients suffering from such conditions for the diagnosis and prognosis.

STUDY PROCEDURE:

You will be interviewed and examined as OP and IP patients at the study centre. At the first visit the physician will conduct a brief physical examination and assess the condition followed by Envagai thervu and routine blood and urine analysis. After matching the inclusion criteria you will be included in this study and you will be examined on the basis of Envagai thervu.

POSSIBLE RISK:

During this study there may be a minimum pain to you while drawing blood sample.

CONFIDENTIALITY:

Your medical records will be treated with confidentiality and will be revealed only to other doctors / scientists. The results of this study may be published in a scientific journal, but you will not be identified by your name.

YOUR PARTICIPATION AND YOUR RIGHTS:

Your participation in this study is voluntary and you may be withdrawn from this study anytime without having to give reasons for the same. You will be informed about the findings that occur during the study. If you do agree to take part in this study, your health record will need to be made available to the investigators. If you don't wish to participate at any stage, the level of care you receive will in no way be affected.

The Ethics committee cleared the study for undertaking at OPD and IPD, NIS. Should any question arise with regards to this study you contact following person

Contact	: Investigator
	Department of Noi Naadal
	National Institute of Siddha,
	Chennai-600 047.

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை-47.

நோய் நாடல் துறை

"காக்கை வலி" - நோய் கணிப்பு முறை மற்றும் குறிகுணங்களை பற்றிய ஓர் ஆய்வு"

பதிவு எண்-32103203 (2011-2013)

நோயாளியின் தகவல் படிவம்

ஆய்வின் நோக்கமும் பயனும்:

தாங்கள் பங்கெடுத்துக் கொள்ளும் - வ்வாய்வு "காக்கை வலி" - நோய் கணிப்பு முறை மற்றும் குறிகுணங்களை பற்றிய ஓர் ஆய்வு" சித்த மருத்துவ முறையில் நோயை கணிப்பதற்கான ஓர் ஆய்வுமுறை. - வ்வாய்வு தங்களின் நோய்கணிப்பை பற்றியும் நோயின் போக்கை பற்றியும் அறிய உதவும்.

ஆய்வு முறை:

தாங்கள் நோக்காணல் மற்றும் பரிசோதனைகளின் மூலம் உள்நோயாளி, வெளிநோயாளி பிரிவில் ஆய்வு செய்யப்படுவீர்கள். முதல் நோக்காணலின்போது ஆய்வாளரால் உடல் பரிசோதனை, நீர், - ரத்தம், மற்றும் மலம் பரிசோதனை செய்து குறிப்பிட்ட குறிகுணங்கள் - ரூப்பின் - வ்வாய்விற்காக எடுத்துக்கொள்ளப்படுவீர்கள்.

நேரும் உபாதைகள்:

- வ்வாய்வில் - ரத்த பரிசோதனைக்காக - ரத்தம் எடுக்கும்போது சிறிதளவு வலி ஏற்படலாம்.

மந்தணம் :

தங்களின் மருத்துவ ஆவணங்கள் அனைத்தும் மருத்துவர், ஆய்வாளர் அல்லாத பிறரிடம் தெரிவிக்கப்படமாட்டாது.

நோயாளியின் பங்களிப்பும் உரிமைகளும்:

- வ்வாய்வில் தங்களின் பங்களிப்பு தன்னிச்சையானது.
- வ்வாய்வில் தாங்கள் ஒத்துழைக்க - யலவில்லையெனில் எப்பொழுது வேண்டுமானாலும் காரணம் எதுவும் கூறாமல் விலகிக்கொள்ளலாம்.
- வ்வாய்வின்போது அறியப்படும் தகவல்கள் தங்களுக்கு தெரிவிக்கப்படும்.
- நோயாளியின் ஒப்புதலுக்கிணங்க நோய்கணிப்பு விவரங்களை ஆய்வாளர் பயன்படுத்திக்கொள்வார். நோயாளி ஆய்வினிடையே ஒத்துழைக்க மறுத்தாலும், எந்த நிலையிலும் நோயாளியை கவனிக்கும் விதம் பாதிக்கப்பட மாட்டாது. நிறுவன நெறிமுறை குழுமம் மேற்கண்ட ஆய்வினை மேற்கொள்ள ஒப்புதல் அளித்துள்ளது. ஆய்வு குறித்த சந்தேகங்கள் - ருப்பின் கீழ்க்கண்ட நபரை தொடர்பு கொள்ளவும்.

ஆய்வாளர்,

**நோய் நாடல் துறை,
தேசிய சித்த மருத்துவ நிறுவனம்,
சென்னை-47.**



NATIONAL INSTITUTE OF SIDDHA

(An Autonomous Body under Department of AYUSH)
Ministry Of Health & Family Welfare, Government of India

Tambaram Sanatorium, Chennai - 600 047
Tel : 044-22411611 Fax : 044-22381314
E-mail : nischennaisiddha@yahoo.co.in
Website : www.nischennai.org

Name: DR. A. GURU. MANEKANDAN. REG. No. 32103203
Title: A STUDY ON DIAGNOSTIC METHODOLOGY AND SYMPTOMATOLOGY OF
KARKKAI VALI/GRAND MAL EPILEPSY

No. 3210 NIS/IEC/2011/3/35 - 24/12/2011

DECISION

Opinion of the Institutional Ethics Committee – Please Check one

☒ Approval

☐ Modifications required prior to approval (Please specify one space below)

☐ Disapproval

Date of review: _____

K. Manickavasagam
(DR. K. MANICKAVASAGAM)
member secretary

Signed: S. Visuvanathan (Please print name) Dr. V. SUBRAMANIAN
chair person

(Please delete as appropriate, Chairperson, Secretary)

Modifications needed

Modification given to candidate

The research proponent is hereby informed that the Institutional Ethics Committee will require the following:

1. All adverse drug reactions (ADRs) that are both serious and unexpected to be reported promptly to the IEC within 7 working days
2. The progress report to be submitted to the IEC atleast annually
3. Upon completion of the study, a final study status report needs to be submitted to the IEC



SRM MEDICAL COLLEGE HOSPITAL AND RESEARCH CENTRE

PHONE: 27455317 Extn: 2423 & 2424.

DEPARTMENT OF DIAGNOSTIC IMAGING

Patient Name : Mr. VIJAYAKUMAR

Date : 05.10.2011

Age/ Sex : 31/M

OP/IP No : 583527

Clinical Impression: Seizure disorder

Ref. Dept : Neuro

C. T. SCAN OF BRAIN PLAIN & CONTRAST

Serial axial CT sections studied from base of skull to vertex before and after administration of non-ionic IV contrast.

Visualized paranasal sinuses appear normal.

Orbits and their contents are normal in the visualized section.

Posterior Fossa: Both cerebellar hemispheres, cerebello-pontine cisterns and visualized brain stem are normal. 4th ventricle is normal.

Sella, Intra-sellar and supra/para sellar regions are normal.

Basal cisterns are normal. 3rd and lateral ventricles are normal.

Cerebral Hemispheres: The cerebral hemispheres show normal parenchymal attenuation. Cortical sulci/gyri and gray-white differentiation are normal. Both the basal ganglia, internal/external capsules and thalami are normal. No mass effect or midline shift.

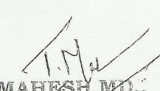
No infarction / SOL.

There is no abnormal enhancement after administration of intravenous contrast.

Cranium: Base of skull and the calvarium appear normal. Soft tissues are normal.

IMPRESSION:

➤ No significant brain abnormality detected on this examination.


DR. I. MAHESH MD.,
RADIOLOGIST


DR. DAMODHAR, DMRD.,
RADIOLOGIST

Meenakshi Clinic (Centre for Neuro & Medical Care)

Plot No. 3, Lakshmi Nagar 6th Extension, Nanganallur, Chennai - 600061. Ph: 22245155 & 9500177146

PATIENT INFORMATION

ID 0486
REF. NO.
NAME MR. MUTHUVEL IYER
AGE 25 Years/M
DATE 11/09/2011
ADDRESS

MEDICATION

ON MEDICATION

HISTORY

SEIZURE

COMMENTS

PATIENT IS CO-OPERATIVE

HANDEDNESS RIGHT
EPILEPTIC Yes
LAST ATTACK
REF. BY Dr. V.C.M., M.D.D.M (NEURO)
REPORTED BY Dr. V.C.M., M.D.D.M (NEURO)
TECHNICIAN E. BENJAMIN

EEG REPORT

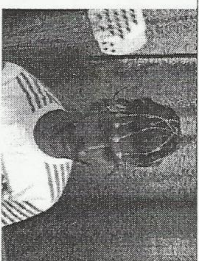
INTERPRETATION:-

Normal A wake record showing wellformed alpha background activity 9 to 10 HZ, in posterior head regions, responds to eye opening .
Heperventilation and Photic stimulation did not induce any abnormalities.
No epileptiform or localization abnormalities were noted.

IMPRESSION:-

Essentially normal study

Dr. V. Chandramouleeswaran, M.D.D.M.
Consultant Neurologist.





Meenakshi clinic (Centre for Neuro & Medical Care)

Plot No: 3, Lakshmi Nagar 6th Extension, Nanganallur, Chennai 61. Ph: 22245155 & 9500177146

PATIENT INFORMATION

ID 0133
REF. NO.
NAME MR. RAJESH.N
AGE 27 Years/M
DATE 28/06/2010
ADDRESS 3/32, SUBRAMANIAM NAGAR, 3th STREET, MADIPAKKAM, CH-91
HANDEDNESS RIGHT
EPILEPTIC No
LAST ATTACK 28-JUNE-2010
REF. BY Dr. V.C.M., M.D., D.M.
REPORTED BY Dr. V.C.M., M.D., D.M.
TECHNICIAN BENJAMIN

MEDICATION

SV# 2-2-2
CB2 1-0-1 (✓)

HISTORY SEIZURE

COMMENTS

PATIENT IS CO-OPERATIVE

EEG REPORT

Shows 8-9 cps alpha wave general activity
responding to command. In shows
intermittent epileptiform changes. (bilateral)
10000 Abnormal record. Suggestive of generalized epileptiform
activity

Dr. Chandramouleeswaran, M.D., D.M.
Consultant Neurologist

ARYA ADVANCED CT & MRI SCANS
NO.2,HOSPITAL ROAD,KANCHIPURAM



Date: 10-Aug-2012

PATIENT INFORMATION

ID : 105
Name : MR. KATHIRESAN
Age : 38 (M)
Address :
Handedness : Right
Medication :
Last Attack :
Refd. By : SELF.,

NOTES

Normal ECG

R

Dr. DR.G.MUGUNTHAN.,